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**DOMINION BUREAU OF STATISTICS
OTTAWA - CANADA**



DOMINION BUREAU OF STATISTICS

HISTORY

FUNCTION

ORGANIZATION

Published by Authority of
THE RIGHT HONOURABLE C. D. HOWE
Minister of Trade and Commerce

Prepared by the
DOMINION BUREAU OF STATISTICS

OTTAWA — CANADA



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PREFACE

This document has been prepared in the Dominion Bureau of Statistics for use by the United Nations International Seminar on Statistical Organization to be held in Ottawa, October 13 to 31, 1952. Its purpose is to describe the various aspects of the organization of the Dominion Bureau of Statistics.

As a central statistical office, the Bureau's activities are comprehensive and varied. Though its Divisions have common features of organization, there exists sufficient difference to require a separate description for each. This description omits detailed discussion of concepts, definitions, or statistical methods. In general, it is restricted to an account of what fields are covered; how the data are collected and compiled; co-ordination of operations within and between Divisions; liaison and co-operation with other departments of the Government of Canada, the Provincial Governments, and the general public; uses of statistical series; statistical gaps; publication of data; and other matters relevant to the organizational aspects of a statistical Bureau.

A handwritten signature in dark ink, appearing to read 'H. Marshall', written in a cursive style.

Dominion Statistician.

Dominion Bureau of Statistics
Ottawa, October 1st, 1952

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Part I

THE DEVELOPMENT OF CANADIAN STATISTICS

Canadian Statistics in the French Regime

Canadian statistics began at a very early date in the history of Canada. This is due in some degree to the fact that the colony was, in its beginning, very small and homogeneous. Thus it has been possible in subsequent times to compile, mainly from the ecclesiastical records, the vital statistics of the French Roman Catholic population of what is now the Province of Quebec back to the year 1608, when Quebec was founded by Champlain. These figures were obtained from the writings of Champlain and Sagard for the years 1608 to 1621, and thereafter from the parochial records, and were published at pages 160 to 265 of Volume V of the Census of Canada, 1871. Naturally enough, in the earliest days of the colony deaths exceeded births, but by 1638, after the age and sex distribution of the small population became more normal, the births in each year exceeded the deaths, and the population increased with relatively great rapidity by natural increase as well as by immigration. Indeed, the French Canadian population has always been remarkable for its high rate of natural increase.

While the above-mentioned statistics were compiled long after the date to which they related, current Canadian statistics began in the days of the *roi-soleil*, when Louis XIV, after taking over the government of the colony from the Company of One Hundred Associates, desired to know what progress had been made and how many people the colony contained after more than half a century of existence. Consequently his indefatigable Intendant, Jean Talon, took the first systematic census of modern times, securing a record of all persons in the colony by name, with their ages, occupations, conjugal condition, and the relationship of each person to the head of the family in which he lived. This census was taken in 1666 on the *de jure* principle, as at a fixed date, and Talon personally carried out a considerable part of the first enumeration, "visiting from door to door all the habitations of Mont Réal, Trois-Rivières, Cap de la Madeleine, and all places above Québec". A supplementary inquiry dealing with areas under cultivation and numbers of cattle and sheep was made in the following year. This initial census of 1666 was repeated for New France no fewer than thirty-six times during the French regime, while, in addition, nine partial censuses were taken. Further, in the later years of the period ten censuses and nine partial censuses were taken for the peninsula of Acadie or Nova Scotia, and ten complete and six partial censuses of Isle Royale or Cape Breton Island, twenty-one complete and four partial censuses of Newfoundland, four of Saint John River (New Brunswick) and seven of Saint John Island or Prince Edward Island, some of these being taken under British authority. Thus the colonies

which now form Canada were well to the fore in respect of the collection of statistics of population, live stock, production, etc., between two and three centuries ago.

Statistics in the Early British Period

Whatever else may have resulted from the cession of Canada to the British in 1763, there was certainly no improvement in statistics. For a considerable time the Colonial Office was contented with reports from Colonial Governors very much less elaborate than those previously arising out of the census. There was a census of Lower Canada in 1765 and again in 1784 and 1790, but it was not until well into the 19th century that census-taking assumed a more regular form and greater comparability as between the colonies. Upper Canada had an annual census from 1824 to 1842, and in Lower Canada there were censuses in 1825, 1827, 1829, 1831, 1832, 1842 and 1844. Censuses of Nova Scotia and New Brunswick were less frequent and censuses of the Assiniboine and Red River District (Manitoba) were taken in 1814, 1822, yearly from 1831 to 1835, and again in 1838, 1840, 1843, 1846, 1849 and 1856. Most of the provinces, however, conceived the idea of a regular decennial census during the 'forties, the Act providing for the Census of 1851, in what was then Canada, including the following preamble: "Whereas it is expedient that the census of this province should be taken in the year one thousand eight hundred and fifty-two, then in 1861 and thereafter in every tenth year, and that better provision should be made for taking the said census", etc. Under this Act were taken the Canadian Censuses of 1851-2 and 1861. Since Nova Scotia and New Brunswick and Prince Edward Island also took censuses in 1851, we have regular decennial enumerations of the organized population of what became the Dominion of Canada, as from that date, and in this sense we might regard the latest census as the eleventh decennial census of Canada.

Statistics at Confederation

Since the Province of Canada was the "pre-dominant partner" in the Confederation established in 1867, it was natural that Confederation should involve an extension of the statistical system to what are now the Maritime Provinces, more especially as in the division of functions between the Dominion and the provinces "the census and statistics" was allocated by the British North America Act to the Dominion. In this connection statisticians will recall with gratitude the name of J.C. Taché, a distinguished member of a distinguished French Canadian family, who occupied the post of Secretary

of the "Board of Statistics" or Committee of three Ministers under which the Statistical Act of 1848 was administered¹. After Confederation, M. Taché acted as Census Commissioner both for the Census of 1871 and for the Second Decennial Census of 1881. As such, he was responsible for bringing together in Volume IV of the Census of 1871 a summary of the results of all the preceding censuses over a period of more than two centuries, and for the compilation of the vital statistics of Quebec already mentioned.

The Development of Statistics after Confederation

Side by side with the census, other official statistics developed. Exports and imports had, of course, been recorded by the constituent colonies. The monthly bank statement dates from 1856 for the then Province of Canada; at Confederation it was extended to the whole Dominion. There also went on from 1867 a semi-official compilation of the statistics of the country edited by Arthur Harvey, F.S.S., of the Department of Finance, Ottawa, with the assistance of officials in New Brunswick, Nova Scotia, and Prince Edward Island. The resultant compilation was first described as "The Year Book and Almanac of British North America for 1867; being an annual register of political and trade statistics, customs tariffs, excise and stamp duties; and public events of interest in Upper and Lower Canada, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and the West Indies". Subsequently the title was changed to "The Year Book and Almanac of Canada - An Annual Statistical Abstract of the Dominion and a Register of Legislation and of Public Men in British North America". This compilation, published for each year from 1867 to 1879, brought together, annually, a great deal of the then available statistics of the provinces and later of the Dominion, and is regarded as being the progenitor of the *Official Abstract and Record of Canada*, which, from 1886 on, dealt annually with the institutions, population, finance, trade, and general conditions of the Dominion, and with tariff data for the United Kingdom, British possessions, and foreign countries.

The beginning of the *Official Statistical Abstract and Record of Canada* in 1886 was doubtless due in part to the need of a statistical compilation similar to that of the older Year Book, which had not been published for some six or seven years. It was also due to the recognition by the Government of the need of better official statistics. In 1879, an Act respecting Census and Statistics had been passed, providing first for the Decennial Census of 1881, and secondly for the collection, abstraction, tabulation and publication of "vital, agricultural, commercial, criminal and other statistics". Again, in 1885, an Act was passed providing for a census to be taken within the following year in the province of

Manitoba, the Northwest Territories and the District of Keewatin, this being the first of the quinquennial censuses of the Prairie Provinces.

Meanwhile other statistics were beginning to come in to the Government as "by-products of administration". Insurance statistics for Canada date from the establishment of the Insurance Branch of the Department of Finance in 1875 and were subsequently pushed back to 1869. While the reason for the collection of banking and insurance statistics was obvious enough, as being a protection to the public, other statistics were collected which were more of an informational than of a directly administrative character. Thus the collection of criminal statistics was provided for by Chapter 13 of the Statutes of 1876, requiring schedules of criminal statistics to be filled in and transmitted yearly by certain court functionaries to the Minister of Agriculture on forms furnished by him; as a result, Canada has available to students of such subjects a complete record of convictions for criminal offences extending over a period of more than 75 years. In the preceding session of the Canadian Parliament, the Railway Statistics Act (C. 25, 38 Vict.) had provided that all railway companies should furnish statements of capital, traffic and working expenditure annually, together with weekly returns of their traffic, the result being that the railway statistics of Canada go back as far as 1876 and have proved of great use to the students of the growth of our transportation system. Postal statistics, statistics of merchant shipping, trade statistics, inland revenue statistics and immigration statistics had been collected from 1867, incidental to the work of the authorities concerned.

Statistical Progress in the 'Eighties and 'Nineties

The 1880's were a period of considerable progress. Subsequent to Taché's retirement, George Johnson was appointed Chief Government Statistician in 1887, and devoted himself largely to the improvement of the *Statistical Abstract and Record of Canada*. Through this and other services, Mr. Johnson became internationally known, and was elected an honorary member of the Royal Statistical Society. The 1894 and 1895 editions of the *Statistical Year Book of Canada* would, indeed, challenge comparison for general informational character with almost any similar works of the period, since Mr. Johnson early grasped the importance of general statistical co-ordination. Mr. Johnson also directed the taking of the third census of Canada in 1891.

In 1900, the collection of social statistics became a part of the statistical picture in Canada upon the creation of the Dominion Department of Labour, which was to collect and classify statistical and other information relative to the condition of labour. This important information was thereafter published monthly in the *Labour Gazette*. In the same year Mr. Archibald Blue was appointed Chief Census Commissioner for the Dominion, and was thus in charge of the fourth census of Canada taken

1. This Act provided for the registration of births and deaths and, as previously stated, for a decennial census of the United Provinces.

in 1901. In 1905, when the permanent Census and Statistics Office was created under Chapters 5 and 6 of the Statutes of that year, Mr. Blue became its chief officer. These Statutes also provided for the Quinquennial Census of the Prairie Provinces, 1906, and the Fifth Decennial Census of Canada, 1911.

Establishment of the Census and Statistics Office in 1905

The setting up of a permanent Census and Statistics Office under the Ministry of Agriculture was a landmark in the history of Canadian statistics, since it meant that the experience gained in the taking of one census was preserved for use in the next, instead of being pitched into the discard as had been the case when the census was taken by an *ad hoc* organization. Further, the combination of other statistics with those of the census operated to create a general statistical point of view and to facilitate the later establishment of the Dominion Bureau of Statistics. Section 15 of the Act of 1905 provided that the "office shall collect, abstract and tabulate agricultural, commercial, criminal, educational, manufacturing, vital and other statistics and information from time to time in the intercensal years of each decade in such ways and manner as are found most practicable". Thus the functions of the Census and Statistics Office were of a fairly general character, while Section 19 provided that special statistical investigations as regards subjects, localities, or otherwise might be made by authorization of the Governor in Council. No attempt was made to work with other statistical branches; the latter, in fact, continued to increase in number and scope. The Act of 1905, however, showed that a body of opinion was being created in the country in favour of co-ordinated statistics and constituted the first step toward the establishment of the present organization.

The Departmental Commission of 1912

Before entirely satisfactory progress could be made, it was essential that the existing official statistics of Canada should be passed in review and a general plan devised. In 1912, the Minister of Trade and Commerce (under whose jurisdiction the Census and Statistics Office had been placed) reported to the Government that while work was being more or less effectively performed in several departments with regard to external trade, crop reports, railway, canal, and labour statistics, wholesale prices of commodities, etc., overlapping of effort and diversity of results were apparent. In particular, "no comprehensive system at present exists for the collection and publication of the statistics of production and distribution of Canadian commodities within the country itself", the provinces in some instances duplicating the work done by Dominion departments, whereas a system of co-operation and collaboration was highly desirable. The Minister accordingly recommended that a departmental commission should be appointed to inquire into the statistical work now being carried on in the various departments and

report on "a comprehensive system of general statistics adequate to the necessities of the country and in keeping with the demands of the time", also that he be authorized to communicate with the various Provincial Governments with a view to ascertaining "what branches of statistical work are being conducted by the provinces and to what extent these may assist in or duplicate work now being done by the Dominion, looking to a system of co-operation". To this commission were appointed representatives of the Civil Service Commission, the Census and Statistics Office, the Department of Trade and Commerce, the Department of Labour, and the Department of Customs. The report of the Commission thus appointed was submitted toward the end of 1912. It substantiated with emphasis the Minister's references to existing conditions, pointing particularly to the "lack of coherence and common purpose in the body of Canadian statistics as a whole". The remedy it recommended was the organization of a central statistical office for the co-ordination, unification, extension and general improvement of statistics. Other recommendations were the taking of a quinquennial census of population and property, the institution of an annual census of production, the co-ordination of the work of the statistical branches of the Departments of Customs and Trade and Commerce, the reorganization of canal statistics involving the creation of statistics of coastal trade, the creation of wages and consumption statistics, improvement in the statistics of insurance, the development of price statistics, and the enlargement of the *Canada Year Book*. In the provincial field, the Commission recommended the co-ordination of statistics of births, marriages, and deaths, public health, education, agriculture, local and municipal governments, industrial accidents, various phases of production, finance, public lands, public works, hospitals and charities. These recommendations have largely constituted the program of the Dominion Bureau of Statistics.

Establishment of the Dominion Bureau of Statistics under the Statistics Act

The first step in carrying out the report of the commission was taken in 1915 by the creation of the office of Dominion Statistician. To him was assigned the duty of devising, in the light of the recommendations of the commission, a practical scheme for the organization of a central Canadian statistical office, bringing under direct control all statistics except those which are by-products of departmental administration, supervising these latter in order that they might be made as useful as possible from the general point of view, and establishing a system of co-ordination with Provincial Governments in order that statistics collected by the provinces in the course of administration or otherwise might be rendered capable of inclusion in the national totals. Memoranda were drawn up descriptive of the procedure desirable in the various statistical fields, numerous consultations and conferences were held with Dominion and Provincial Departments, and finally in 1918 the Dominion Bureau of Statistics

was established to carry on the statistical work of Canada along the lines laid down by the Commission of 1912 to the extent that was then thought practicable. In this connection, tribute should be paid to the Hon. Sydney Fisher, Minister of Agriculture, who in setting up the Census and Statistics Office broke important new ground, and to the Rt. Hon. Sir George E. Foster, Minister of Trade and Commerce, who took a keen personal interest in the negotiations which rendered the establishment of the Bureau possible.

The Statistics Act of 1918 is a measure designed to give final form to the statistical policy of Canada, crystallizing the suggestions of the Commission of 1912 and laying down a definite plan for the organization and development of statistics. Structurally, it is a consolidation of previous statistical legislation (the Census Act, the General Statistics Act, the Railway Statistics Act, the Criminal Statistics Act, and the statistical sections of other legislation), with additions to render the scheme comprehensive. Specific sections deal with the decennial and the quinquennial censuses of population and agriculture, an annual census of industry, statistics of trade and commerce, transportation statistics, criminal, and general statistics. But the most significant section is that creating the Dominion Bureau of Statistics and defining its functions as "to collect, abstract, compile and publish statistical information relative to the commercial, industrial, social, economic and general activities and condition of the people" – a general mandate. The important instruction is added that the Bureau is "to collaborate with all other departments of the government in the compilation and publication of statistical records of administration according to the regulations", with a further section on provincial collaboration.

Statistical Progress between 1918 and 1939

During the years following the passage of the Statistics Act of 1918, the framework of the Dominion Bureau of Statistics organization was worked out by the first Dominion Statistician, Dr. R.H. Coats, and the large and varied field of operation entrusted to the Bureau was effectively occupied. Among special features of the early operations of the Bureau were: the holding of two Dominion-Provincial Conferences on Vital Statistics in 1918 with the result of securing the adoption of a model bill providing for the collection of uniform records of births, marriages, and deaths; the creation of a unified and co-ordinated scheme of agricultural statistics for the whole of Canada; the organization of an annual industrial census including forestry, fisheries, mining, and manufacturing; the consolidation of external trade statistics previously published by the Department of Customs, Department of Trade and Commerce, and the Census and Statistics Office; the introduction of a common tripartite scheme for the classification of commodities and industries; the commencement of nation-wide education statistics as a result of the Dominion-Provincial Education Statistics Conference of 1920. Most of the purely statistical branches of other departments of the Federal Government were

transferred to the Bureau and co-operative arrangements with the provinces in many different fields were established.

Within the next few years criminal statistics were reorganized and relations between the Dominion Bureau of Statistics and the Department of Labour reduced to a formal working arrangement with elimination of overlapping. Arrangements were made with the Department of Immigration for securing comprehensive information regarding immigrants, particularly with respect to their origins, birthplaces, languages, nationalities, and occupations, thus facilitating comparisons with the data secured at the censuses. The Decennial Censuses of 1921 and 1931 and the Quinquennial Censuses (of the Prairie Provinces) of 1926 and 1936 were taken. In general it may be said that by 1939 the broad framework of a unified and co-ordinated system of national statistics for Canada had been established though some important details remained to be filled in and the whole organization streamlined to bring it up to the highest standard of modern efficiency.

Statistical Progress between 1939 and 1952

World War II brought an unprecedented demand for statistics. Early in the war the Bureau was called upon to expand its own statistical compilations to meet new needs. For example, the cost-of-living index became a key figure. Employment statistics had to be expanded to meet the requirements of war departments and monthly payroll statistics were added to the Bureau's employment series. There was also some expansion in Census of Industry statistics.

During the war years the need for special statistics of a temporary nature was met in large measure by separate statistical sections, set up in war departments and agencies to collect detailed information for the administration of controls, etc. Most of this work was not of general or continuing usefulness and was dropped as controls ceased. A small part, however, proved to be extremely valuable in relation to continuing postwar needs and was transferred to the Bureau, thus resuming the principle of statistical centralization.

The increased complexity of the world's social and economic problems in the postwar period, the trend toward social security, the acceptance by governments of responsibilities concerning high employment, all led to increased needs for statistics at the national level. For instance, such policies as government tariffs, taxation, unemployment insurance, old age pensions, etc., must be planned, their incidence studied, and the extent of the burdens that they impose in relation to the national economy known before they are put into effect. This growth in the statistical needs of national governments has been accompanied by an increase in the needs of non-governmental users of statistics, due, among other things, to greater industrialization and a growing awareness of the value of statistics to business efficiency. Added to this is the existence of the United Nations, its specialized agencies and

numerous commissions, all of which have created a demand for statistics at an international level far beyond anything experienced in the past. The corresponding increase in the administrative functions of government has created an urgent demand for reliable statistics as an aid to administration and policy-making at the higher level.

These developments made the expansion of the Bureau and changes in its organization and operations inevitable. Since 1939 the Bureau staff has approximately doubled. The alternative to this expansion would have been the creation of separate statistical units by numerous new departments, economic research branches, government corporations and commissions which have come into existence since 1939 and which use statistics as the primary material of their study and research. Such a course would have greatly increased the costs.

Late in 1943 an Interdepartmental Committee was formed, at the request of the Dominion Statistician, to discuss reorganization of the Bureau to meet postwar needs. As a result of the recommendations of this Committee there was created in the Bureau a Research and Development Division and also a Sampling Organization. The function of the former was to integrate and analyse existing statistical data and to develop therefrom new series of economic statistics of outstanding importance. The first fruits of the work of this Division were the complete reorganization of National Income Statistics and their expansion into the National Accounts Series. These estimates now constitute a basic statistical background for financial and fiscal policy. The classification of these accounts into a separate statistical summary for various sectors of the economy reveals the interrelationship of the sectors and provides a valuable statistical tool for economic analysis. Aside from other important uses, the National Accounts are a basis for determining the amount of Federal-Provincial subsidies.

Statistical sampling has been developed in recent years to the point where it is now recognized as an essential scientific technique. It permits surveys to be made much more quickly and with a fraction of the staff required for complete enumeration, yet it can yield results well within the margin of error necessary for practical purposes: indeed, when properly applied, this method is frequently capable of furnishing data of a higher quality than can be obtained by ordinary enumeration. Being a highly flexible instrument, extra questions can be readily added to the regular sampling design to obtain special information. Sampling also lessens the questionnaire burden. Since the Bureau set up the Sampling Organization it has made numerous special surveys in conjunction with its Quarterly Survey of the Labour Force (an overall picture of employment, unemployment, civilian labour force, etc.) for other departments of the government. The Bureau is gradually expanding the use of this method with a view to curtailing needs for extra staff. In 1948, the Statistics Act was amended to authorize the collection of statistics by means of "sampling".

Another factor influencing the growth of the Bureau has been the recent development of research activities in various government departments and the creation of new government agencies. The Economic Research Branches of government departments, the Central Mortgage and Housing Corporation, various Boards and Commissions, have created new demands for statistics. In consequence, the work of certain of the Bureau Divisions has increased considerably.

In recent years the Bureau has taken over the work initiated by the Rowell-Sirois Commission in the field of Dominion-Provincial finance and, in consequence, expansion of the Public Finance Division was necessary.

Canada's membership in the United Nations carries statistical obligations. Besides the flow of regular series to the Statistical Office of the United Nations, some of the specialized agencies, in particular the Food and Agriculture Organization, have created a need for many new compilations.

As the result of the work of an Interdepartmental Committee appointed in 1944, the Dominion Bureau of Statistics Standard Industrial Classification Manual was published in 1948 and is now widely used by departments and agencies of the Federal Government, Provincial Governments, and private firms. The first draft of a new Standard Commodity Classification was drawn up in 1951. This is designed to serve as a standard for all statistical work related to commodities such as external trade statistics, statistics of production and materials used, inventory statistics, retail sales, price series, etc. Both of these classifications are so designed as to permit readily of convertibility to the United Nations Standard Industrial Classification and the United Nations Standard International Trade Classification, respectively.

With the entrance of Newfoundland into Confederation in 1949 the task of incorporating the statistics of that province into Canada's national statistics was assumed.

The Promotion of Economy. — In recent years, special attention has been given to streamlining Bureau operations. Its rapid growth made it imperative that every effort should be made to ensure the most efficient operation so that staff and general costs could be kept to an essential minimum.

A great deal has now been accomplished but it will take time to reap the full benefits of the changes which have been made. New procedures have already introduced many savings, work no longer essential has been eliminated, more efficient methods introduced, and output speeded up. Some concrete examples are:

1. The principles of up-to-date "organization and methods" are being applied by the Administration Division to ensure the use of the most efficient and up-to-date equipment, to improve work-flows, eliminate superfluous operations, improve working

conditions, standardize stationery and forms, and improve in other ways the business aspects of the Bureau's activities.

2. Arrangements were made with the manufacturers of business machines installed in the Bureau to have one of their experts stationed in the Bureau to ensure the most efficient use of the equipment.
3. A limited cost-accounting system was set up to study the costs of various operations, the data to serve as a guide to the most economical use of personnel and materials.
4. Tabulating machines were centralized to ensure full-time use and resulted in a reduction in staff. A radical change was made in the layout of the tabulation machines, resulting in a more efficient flow of work and greatly improved working conditions for the operators.
5. A more economical method of tabulating certain broad fields of statistics was introduced by substituting the peg-board system, combined with a special form of questionnaire, for adding machine methods. Saving in clerical time in these operations is from one-half to two-thirds.
6. As a result of recommendations of The Advisory Board of Publications established in 1948 (see below) substantial economies have been introduced. Hitherto numerous reports issued by the Bureau by the offset process were later reprinted at the Printing Bureau from cast type as annual reports at considerable expense. Improved photolithographic processes render this double printing unnecessary.

A program has been worked out whereby individual annual reports (e.g., for the Census of Industry) are printed by vari-typewriter and mailed to subscribers in perforated form for binding.

Many preliminary reports have been discontinued. A substantial number of reports have been transferred to the "Memoranda" or "Reference Paper" class with limited specialized distribution. Mailing lists have been scrutinized thoroughly and many names on the "free" lists deleted. Many reports have been reduced in size and some combined.

The curtailment program has resulted in substantial savings with no deterioration in quality of output.

7. More than two years before the 1951 Census was taken, a special Census Executive Committee, composed of senior Bureau officials possessing knowledge and experience pertinent to census operations was set up. The purpose of the Committee was to examine old census procedures to see if improvements could be made which would speed completion, reduce costs, and at the same time achieve the highest possible degree of accuracy. Some 80 meetings were held in the preparatory period. Radical changes in census-taking were introduced, including decentralization, the

use of field supervisors, improved instruction programs, the use of the mark-sense principle, new machines such as the document punch and the electronic statistical machine, and others. It is estimated that the 1951 Census will cost between one and two million dollars less than if it had been taken by the old methods. It is planned to have the final volumes out in the first half of 1953, which is about half the time taken in previous censuses. The final volumes will be done by vari-typewriter process, thus eliminating double printing.

8. A new Forms Control Section was established on April 1, 1952, to review all questionnaires and office forms in use and to redesign them when necessary in order to prevent duplication, facilitate tabulation, etc.

The Advisory Board of Publications.—An Advisory Board of Publications was established in the Dominion Bureau of Statistics on September 1, 1948, consisting of the Assistant Dominion Statistician as Chairman, the Administrative Officer, the Director of the Education and Information Services Division, and the Senior Research Statistician. The responsibility of the Board is the constant review of the Bureau's publishing program with a view to:

- (a) eliminating all unnecessary publications;
- (b) ensuring that each publication retained meets a need that can be clearly demonstrated and fully justified;
- (c) reviewing the composition and general format of material in each publication;
- (d) reviewing every new publication — from the point of view of justification and presentation — before it is released for distribution;
- (e) standardizing, wherever feasible, the publications of the Bureau.

In co-operation with the statistical Divisions, the Board maintains complete information, financial and otherwise, with regard to the entire publishing program of the Bureau and is required to:

- (a) meet at least four times a year;
- (b) review each publication of the Dominion Bureau of Statistics at least once in each year;
- (c) keep minutes of the meetings for the information of the Dominion Statistician;
- (d) report to the Dominion Statistician, periodically, on all matters relating to the publications program of the Bureau.

In addition to the economies instituted by the Board (see 6. above) a further work has been the promotion of high editorial standards and of uniform standards as between the various Divisions of the Bureau. To this end the Board prepared a booklet "Rules and Principles for the Guidance of Dominion Bureau of Statistics Officers in the Preparation of Copy for Reports". This is now in general use throughout the Bureau.

Part II

ORGANIZATION OF THE GOVERNMENT OF CANADA

In order that the organization and administration of the Dominion Bureau of Statistics may be viewed in proper perspective, a brief summary of Canada's system of government may be of interest.

Canada is a federal state. Its system of government includes the Federal Government, ten Provincial Governments, and many municipal corporations with powers delegated to them by the Provincial Governments.

The Federal Government consists of three branches, — executive, legislative, and judicial. The Queen (represented by the Governor General), and the Cabinet or Ministry (which is an active committee of the Queen's Privy Council for Canada and is responsible to the Legislature for all matters of policy), constitute the Executive Branch; the two Houses of Parliament (Senate and House of Commons) constitute the Legislative Branch; and the Courts, the Judicial Branch. Each of the provinces has a similar system. In both Federal and Provincial Governments the Ministry is answerable for its conduct to the elected representatives of the people in the House of Commons or the Legislative Assemblies. Canada's constitution is partly written, partly un-

written. The distribution of power between the Federal and Provincial Governments and the jurisdiction of the Courts is set down in the British North America Act of 1867 and its amendments. In general, all matters of national concern are under the jurisdiction of the Federal Government, while matters of local or private nature are under provincial jurisdiction.

The policy-forming body of the Federal Government is the Cabinet or Ministry. The Ministers are chosen by the Prime Minister from among his party following in the House of Commons or the Senate; each generally assumes charge of one of the several departments of government. The continuing work of each department is carried on by a permanent Deputy Minister assisted by a body of civil servants appointed by the Civil Service Commission on the basis of merit.

The organization of the Federal Government is shown on the accompanying chart. The Dominion Bureau of Statistics, it will be noted, reports to Parliament through the Minister of Trade and Commerce.

The Centre Block of Canada's Parliament Buildings



(Courtesy of
National Film
Board)

GOVERNMENT OF CANADA
Chart showing organization

THE GOVERNOR GENERAL

Part III

ORGANIZATION OF THE DOMINION BUREAU OF STATISTICS

As organized at present, the Dominion Bureau of Statistics is headed by the Dominion Statistician, who is responsible for policy and general direction of the Bureau. The Assistant Dominion Statistician is responsible for administration. There are two senior officers: a Senior Research Statistician, and an Administrative Officer.

The Bureau is organized in fourteen functional Divisions each of which is further divided into Sections. The Administration Division is responsible for the various aspects of the Bureau's administration. Ten of the Divisions – Agriculture, Census, Education, General Assignments, Health and Welfare, Industry and Merchandising, International Trade, Labour and Prices, Public Finance and Transportation, and Special Surveys – are engaged in the collection, processing, and editing of statistical data. The Mechanical Tabulation Division is concerned with the machine processing of the data supplied by the subject matter Divisions. Statistical information supplied by the subject matter Divisions and outside sources is channelled to the public through the Information Services Division. The Research and Development Division is responsible for the National Income Estimates and the National Accounts and assists other Divisions of the Bureau in developing or improving economic statistics to meet the needs of these overall statistical series.

Each Division is headed by a Director who is responsible for the organization of the Division, the integration of activities therein, and the general direction of staff. The detailed operation and the immediate supervision of staff are the responsibility of the Chiefs of the Sections within each Division. Integration is achieved by frequent meetings of the Director with the Chiefs and professional and technical officers of the Division. Co-ordination on matters of general policy throughout the Bureau is achieved by means of conferences of the Directors, and when necessary the Chiefs, under the personal chairmanship of the Dominion Statistician.

The Dominion Statistician

The title and duties of the chief officer of the Bureau are specifically defined in the Statistics Act as follows:

“4. (1) The Governor in Council may appoint an officer to be called the Dominion Statistician, who shall hold office during pleasure, and whose duties shall be, under the direction of the Minister,

- (a) to advise on all matters pertaining to statistical policy and to confer with the several departments of Government to that end;
- (b) to organize and maintain a scheme of co-operation in the collection, classification and publication of statistics as between the several departments of Government;
- (c) to supervise generally the administration of this Act and to control the operations and staff of the Bureau; and
- (d) to report annually to the Minister with regard to the work of the Bureau during the preceding year.”

Sub-section (2) of Section 4 of the Act states:

“4. (2) Such other officers, clerks and employees as are necessary for the proper conduct of the business of the Bureau may be appointed in the manner authorized by law.”

The Assistant Dominion Statistician

This officer is responsible for the internal administration of the Bureau and the external relations which this involves. He also acts for the Dominion Statistician in his absence.

Senior Research Statistician

This officer acts as adviser to the Dominion Statistician on matters of statistical methodology. He is available for consultation with the various Divisions on problems arising out of their work, particularly those involving higher mathematical and statistical techniques. He is directly responsible for the methodology used in the Bureau's population estimates and projections and for sampling methods.

Administrative Officer

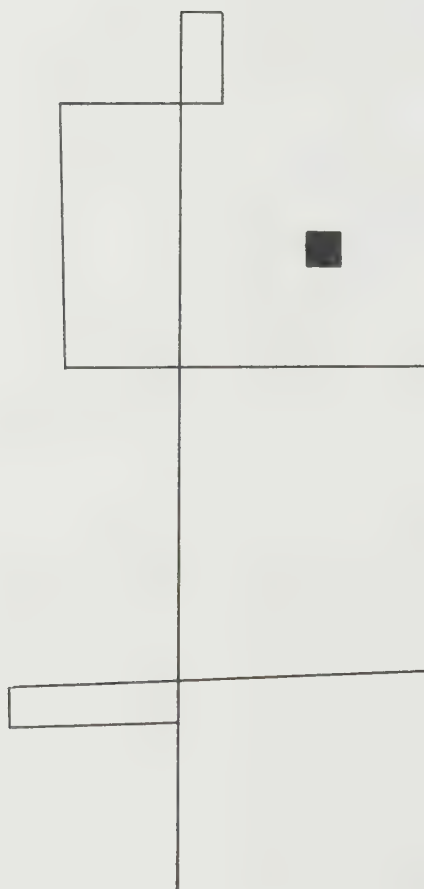
This officer assists in a wide variety of administrative problems. In particular he is concerned with organization and methods from the operational point of view, the efficient operation of mechanical equipment, the search for improved machines, improvements in form design, the best allocation of space, the flow of work, printing and processing methods, and the miscellaneous matters concerned with work routines and working conditions. He is also Director of the Mechanical Tabulation Division.

Other Staff Organization

The staff of the Bureau comprises Directors of Divisions, Chiefs of Sections, other professional and technical officers, and clerical personnel, including stenographers, typists, and machine operators. The staff organization is shown in a series of Charts throughout this publication.

It must be recognized, however, that an organization such as the Dominion Bureau of Statistics does

not stand still either in organization or administration. The grades shown on the Charts are those which were in effect during the summer of 1952. The classification of positions in the Bureau is under continuous review by the Administration Division and the Civil Service Commission and positions are reclassified in the light of experience and increased responsibilities. Thus a number of the classifications shown on the Charts have since been upgraded.

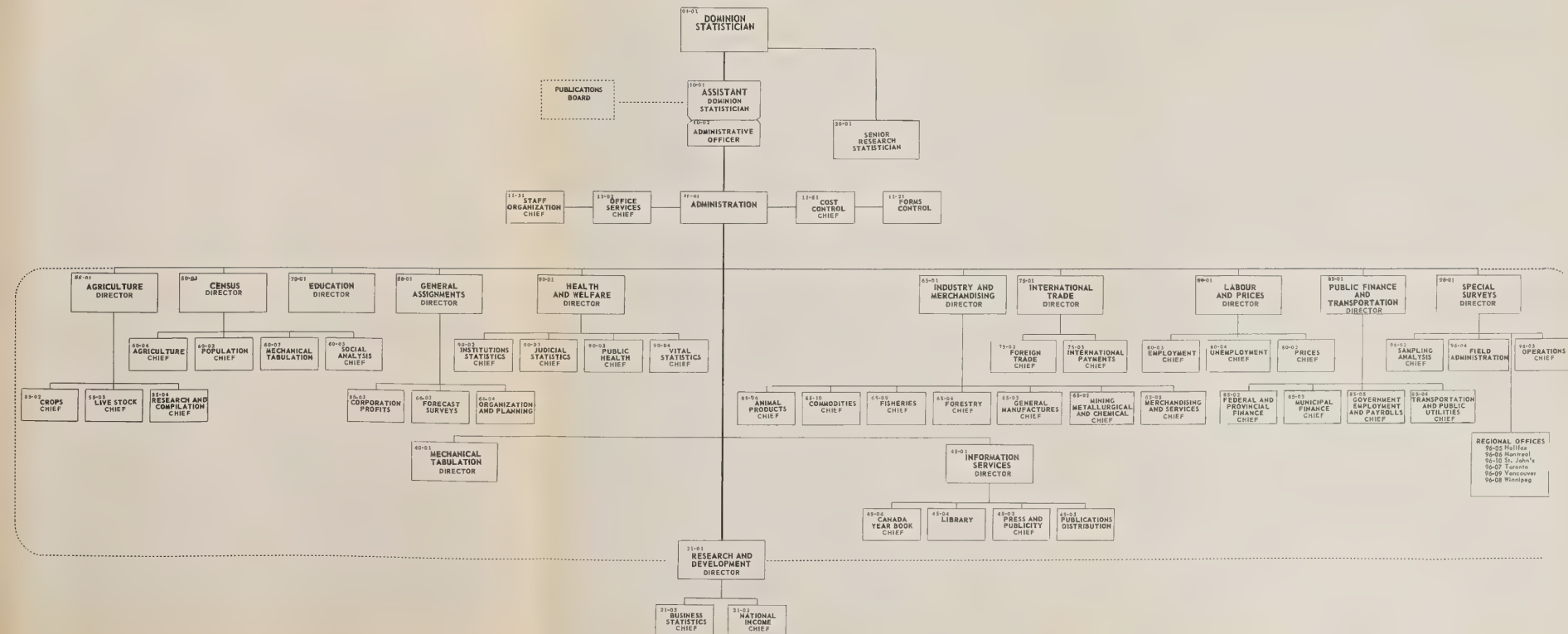


DOMINION BUREAU OF STATISTICS

Chart showing organization

DOMINION BUREAU OF STATISTICS

GENERAL ORGANIZATION



DOMINION BUREAU OF STATISTICS

ADMINISTRATION DIVISION

The Dominion Bureau of Statistics must conform to all regulations governing Canada's public service. External relations, therefore, constitute a very important part of the work of administration and constant liaison is maintained with certain other branches of the public service, particularly those described below.

The Civil Service Commission, a branch of the Secretary of State Department, is charged with the general administration of Canada's public service. It is responsible for recruitment, permanent appointments, promotions, reclassifications, etc., all of which are on the basis of merit.

The Treasury Board is a Committee of the Queen's Privy Council for Canada on all matters relating to finance, revenues, estimates, expenditures, financial commitments, accounts the terms and conditions of employment, and general administrative policy in the public service. Since the cost of civil staff represents one of the largest items of controllable government expenditure, the control of civil service expenditures is one of the Board's major functions. All departmental estimates must be approved by it before presentation to Parliament. All changes in rates of compensation, all additional positions, installation of telephones, rental of tabulating and punch card equipment, etc., must be submitted to the Treasury Board for approval before being effected.

The Comptroller of the Treasury, a branch of the Department of Finance, is the general accounting office of the Government. Its function is to see that the moneys voted by Parliament are used for the purpose for which they were intended and that no vote for a specific service is exceeded. All payments of Dominion Bureau of Statistics accounts are made by the Office of the Comptroller of the Treasury through the Chief Treasury Officer for the Department of Trade and Commerce.

The Public Works Department is responsible for government building and maintenance, the provision of basic services such as water, heat and light, and the provision of furniture and filing equipment.

The Department of Public Printing and Stationery, under the direction of the Queen's Printer, is responsible for the printing and sale of government reports. Because of lack of space, facilities, and staff in this Department, and on account of pressure for immediate production, urgent work, and the increasing cost of conventional printing by letter-press, Departments have gradually purchased and are operating certain small size offset duplicating machines. For greater convenience, a printing plant under the

control of the Queen's Printer is located in the Dominion Bureau of Statistics. (See Office Services Section).

The preparation of the submissions to the above-mentioned bodies with respect to the matters under their control, and the necessary conferences, correspondence, etc., in connection therewith, are the responsibility of the Administration Division. All submissions are reviewed by the Assistant Dominion Statistician and the Dominion Statistician, and must have the approval of the Deputy Minister and the Minister of Trade and Commerce before being submitted to the appropriate authorities.

The internal administration of the Bureau involves office management including personnel administration, accounting, the provision of office services, and, in general, the promotion of efficiency and economy in the administration of the Bureau. Co-ordination in matters of administration is achieved by frequent conferences of the Administrative Officer and the Chiefs of the Sections within the Division, under the chairmanship of the Assistant Dominion Statistician. Directors of other Divisions are called into consultation on matters affecting their Divisions.

The Administration Division is divided into four Sections: Staff Organization, Office Services, Cost Control, and Forms Control. The function and organization of each of these Sections is described below.

Staff Organization Section

This Section is concerned primarily with the administration of personnel. It is responsible for planning and directing all operations relating to personnel administration including selection and placement, pay and attendance, and termination of service. It is responsible also for the administration of the Charting and Mapping Unit and has general responsibility for two branches of other departments located in the Bureau and providing services to Bureau personnel. These are the Health Unit (Department of National Health and Welfare), and the Translation Unit (Secretary of State Department).

The organization of the establishments of the Divisions and Sections of the Bureau is under continuous review by the Administration Division and the Organization Branch of the Civil Service Commission, in an effort to keep the classification of individual positions in line with positions of similar responsibility within the Bureau, and, at the same

time, bring the Bureau's organization of personnel into relationship with that of other government departments.

The staff of the Bureau numbers approximately 1,350. This number is considerably exceeded when the compilations of the decennial and quinquennial censuses are under way. Some 1,700 additional employees were engaged in compiling the 1951 Census. Of these, 300 were in Ottawa, while the remainder were in the different Regional Offices of the Bureau.

The staff of the Bureau comprises professional and technical personnel (classified usually as statisticians, economists, administrative officers or technical officers), and clerical personnel (including stenographers and typists and office appliance operators). For grades and salary ranges see Appendix D.

Selection and Placement

The Staff Organization Section investigates, reports, and recommends to the Assistant Dominion Statistician changes in the establishment. This involves consultation with the Directors of Divisions regarding their staff requirements and with the Civil Service Commission. If approved, the necessary documents are prepared for submission to the Civil Service Commission or Treasury Board.

Federal Government employees are recruited by the Civil Service Commission on the basis of merit by means of competitive examinations open to all Canadian citizens. Eligible lists are established and the requisitions of the various departments filled therefrom. Technical and professional personnel are recruited mainly from the universities. These, too, must pass competitive examinations set by the Civil Service Commission. All employees are on probation for a period after initial appointment. Retirement is voluntary at age 60 and compulsory at age 65, with certain exceptions for persons with special qualifications.

Promotional Competitions

The merit system is continued in filling vacancies above the entrance grades by promotional competitions open to qualified employees. Applicants are rated by examining boards comprising usually one officer from the Division concerned and two impartial examiners. The Staff Organization Section advises on regulations and procedures governing the selection of successful candidates. In rating the applicants, factors such as education, experience, length of service, attendance record, and personal suitability for the position are considered. Unsuccessful candidates have the right to appeal the decision of the examining board. The Chief of the Staff Organization Section sits on the appeal boards.

Reclassification

This is done by either of two methods. The first method is by unit survey, in which all the positions within the unit are examined and a new establishment

is set up. The second method is by reclassification of individual positions. This procedure is adopted usually in cases where the responsibility of one or a small number of positions has changed substantially but that of the main group has remained at approximately the same level as at the time of the previous unit survey.

It is the objective of the Administration Division and the Civil Service Commission to have all the positions reviewed at sufficiently frequent intervals that injustices to individual employees will be corrected at an early date. However, the numerous demands for new statistical material, the rapid development of the application of existing data and re-allocation of assignments since the end of the war have accentuated the problem of keeping the establishments in line with the work levels of the Divisions. A great deal of work still remains to be done to bring the classifications in many of the Divisions into proper balance. The classifications shown on the charts in this publication are those which were in effect in the summer of 1952.

Staff Allocation

The Staff Organization Section works in close co-operation with the various Directors and Chiefs in arranging staff changes in an effort to increase the working efficiency of the Bureau staff as a whole. Staff changes include both long-term allocation and temporary assistance for peak periods.

Attendance and Leave

All Bureau employees are governed by uniform civil service regulations. They are allowed 18 days vacation, 6 days special, and 18 days sick leave per annum. On retirement they may be granted up to 6 months retiring leave with pay. Bureau employees are required to sign daily attendance sheets. If late more than five times in any one month, they are penalized by the loss of a day's pay. Senior officers are not required to sign attendance sheets but must fill in a monthly form certifying to their attendance.

Staff Records

Index cards are maintained showing the establishment, individual employment record, and individual attendance record.

Staff Counselling

Employees may consult the personnel officers regarding their personal and work problems. In this work the Personnel Unit works in close co-operation with the Health Unit.

Health Unit

A branch of the Civil Service Health Division of the Department of National Health and Welfare provides a health counselling service for Bureau employees. Registered nurses with specialized training provide emergency treatment for on-the-job illness

DOMINION BUREAU OF STATISTICS
ADMINISTRATION DIVISION

Chart showing function
and organization

DOMINION BUREAU OF STATISTICS

ADMINISTRATION DIVISION

Responsible for the internal administration of the Bureau and external relations in connection therewith. The staff of the Division numbers 125.

Assistant Dominion Statistician, J.T. Marshall

Administrative Officer, C. Scott

1 Clerk Grade 4

STAFF ORGANIZATION SECTION

Responsible for personnel administration and certain services. The staff of the Section numbers 24. For further details see Staff Organization Section chart.

OFFICE SERVICES SECTION

Responsible for the provision of specific office services. The staff of the Section numbers 89. For further details see Office Services Section chart.

COST CONTROL SECTION

Prepares estimates of funds and submissions to Treasury Board re financial matters. Maintains cost accounting system, etc. The staff of the Section numbers 6. For further details see Cost Control Section chart.

FORMS CONTROL SECTION

Reviews all questionnaires and office forms in use and redesigns them to prevent duplication, facilitate tabulation, etc. This Section recently established is in process of organization. The present staff numbers 3.

PERSONNEL UNIT

Staff - 16

HEALTH UNIT

Staff - 3

CHARTING AND MAPPING UNIT

Staff - 7

TRANSLATION UNIT

Staff - 11

BUILDING SERVICES UNIT

Staff - 2

SUPPLIES UNIT

Staff - 4

MAIL AND MESSENGER UNIT

Staff - 8

COMPOSING UNIT

Staff - 41

CENTRAL STENOGRAPHIC AND TYPING UNIT

Staff - 20

ADDRESSOGRAPH UNIT

Staff - 12

MACHINE SHOP

Staff - 1

ATTENDANCE

Staff - 3

RECORDS AND PAY

Staff - 8

PLANNING, DRAFTING AND CORRECTING SUB UNIT

Staff - 9

PRINTING PLANT

Staff - 29

VARI-TYPER SUB UNIT

Staff - 30

and accidents, consultation, advice and guidance on matters of personal and emotional health utilizing all available community social agencies. Employees requiring medical examination and special investigation are referred to their family physician or to physicians and consultants at the Health Centre of the Civil Service Health Division where complete advisory and diagnostic services are available.

Staff Training Programs

The Staff Organization Section is responsible for the administration of the staff training programs for junior administrative officers, supervisors, refresher courses for stenographers, etc. In this work close co-operation is maintained with the Staff Training Division of the Civil Service Commission.

Liaison with Cost Control Section

The Staff Organization Section works in close co-operation with the Cost Control Section in order to co-ordinate the records required, especially for estimates and superannuation purposes.

Charting and Mapping Unit

The Staff Organization Section is responsible for the administration of this Unit which provides a charting and mapping service for all Divisions of the Bureau and, at times, for other government departments and agencies.

Translation Unit

The Staff Organization Section has general responsibility for the Translation Unit which is a branch of the Secretary of State Department located in the Bureau. This Unit provides all necessary translations for the Bureau.

Office Services Section

The function of this Section is to render to the various Divisions of the Bureau the specific office services for which it has been made responsible. In general, it plans, directs, and co-ordinates the allocation of office and storage space; the procurement, maintenance, transportation, and distribution of equipment, supplies, and mail; telephone and teletype services; the preparation of copy for reproduction by offset printing; and the duplication of various questionnaires, reports, and other printed matter. The Section is divided into seven units: Building Services, Supplies, Mail and Messenger, Composing, Central Stenographic and Typing, Addressograph, and Machine Shop.

Building Services Unit

This Unit plans, negotiates, and issues requisitions for equipment and services supplied by the Department of Public Works.

Supplies Unit

This Unit investigates demands for office machines and supplies, arranges for their procurement and distribution. It is responsible for the maintenance of office equipment and maintains perpetual inventory and procurement records.

Mail and Messenger Unit

This Unit is responsible for mail collection and delivery, its distribution throughout the Bureau, and all necessary messenger service.

Composing Unit

This Unit plans, directs, and co-ordinates the work of vari-typing, advises on layout and format of Bureau publications. It is divided into two sub-units (Planning, Drafting and Correcting; and Vari-Typer); and maintains close contact with the Printing Plant, a branch of the Department of Public Printing and Stationery located in the Bureau.

Central Stenographic and Typing Unit

This Unit provides stenographic and typing service for all Divisions of the Bureau.

Addressograph Unit

This Unit is responsible for the preparation and maintenance of addressograph plates and the addressing of questionnaires, form letters, envelopes, etc., therefrom.

Machine Shop

This Unit is responsible for the maintenance and repair of specialized equipment.

Cost Control Section

The financing of the operations of the Dominion Bureau of Statistics is effected by means of funds provided by Parliament, on the basis of an annual estimate which is included as a specific vote within the estimates for the Department of Trade and Commerce.

The preparation of the estimates and the maintenance of control of expenditures within the funds provided and within the governmental regulations are the responsibility of the Cost Control Section. The regulations are those established by the Treasury Board. All payments of accounts are made by the office of the Comptroller of the Treasury through the Chief Treasury Officer for the Department of Trade and Commerce.

Processing of Accounts

All invoices are directed to the Cost Control Section. After being checked for accuracy and compliance with regulations they are entered on a vouch-

er form which is signed by the Chief of the Section and submitted to the Assistant Dominion Statistician for approval. These vouchers are then forwarded to the Chief Treasury Officer for issuance of cheques.

Record of Expenditures

The vouchers serve two purposes with respect to the accounting of expenditures, viz., commitment control, and distribution of expenditures by Divisions and Sections of the Bureau.

Commitment Control

This system is maintained by the Treasury Office on the basis of financial encumbrances established by the Cost Control Section of the Bureau for the various items of expenditures specified in the estimates, such as salaries, supplies, rental of office equipment, etc., to which the expenditures are charged.

All vouchers are coded to comply with this system from which monthly "Allotment and Expenditures" statements are mechanically tabulated by the Central Office of the Comptroller of the Treasury.

Cost Accounting

A system of internal cost accounting is maintained in the Cost Control Section to provide a record of the cost of operating each Division and Section of the Bureau. This involves the distribution of the cost of all supplies issued, salaries, services such as communication services, travelling expenses of field staffs, etc., and of centralized services within the Bureau such as mechanical tabulation, printing, typing, etc.

Regional Statistics Offices

Each Regional Statistics Office is provided with a "Bank Imprest Account" to provide for local expenditures and for travelling expenses of the staff. These accounts are reimbursed monthly for expenditures incurred.

Submissions to Treasury Board

Some expenditures, especially those for any new project and those of a contractual nature require Treasury Board and, sometimes, Cabinet authority. Submissions for these authorities are prepared by the Cost Control Section, for approval of the Dominion Statistician or his Assistant, recommendation by the Deputy Minister of Trade and Commerce and concurrence of the Minister of Trade and Commerce.

Accounts Receivable

All charges for services rendered to other government departments or non-government agencies, companies, etc., are billed by the Cost Control Section through the Treasury Office which receives the payments for credit to the Bureau's revenue account.

Preparation of Estimates

The Cost Control Section maintains liaison with the various Divisions and Sections of the Bureau in order to obtain information pertaining to funds required for inclusion in the annual estimates, for the preparation of financial encumbrances, verification of receipt of goods or services, etc., for which expenditures are to be made. This applies especially to the Staff Organization Section with regard to information pertaining to staff requirements and to the information provided by this Section to the Central Pay Office of the Office of the Comptroller of the Treasury, from which all salary cheques are issued.

The estimated requirements of funds for the fiscal year April 1 to March 31 are provided as three separate votes, viz: Administration, Statistics, and Census, each of which includes specified primary allotments to provide details of the expenditures involved.

These separate votes provide for the cost of the following services, operations and divisions of the Bureau.

Administration Vote.— This vote includes the central services of the Bureau, which are directly under the Assistant Dominion Statistician such as General Administration, Staff Organization, Cost Control, Distribution of Supplies.

Statistics Vote.— This vote includes all the Divisions of the Bureau with the exception of the Administration and Census Divisions and provides for such Central Services as typing, printing, mechanical tabulation.

Census Vote.— This vote provides for the continuing operations of the Census Division and the taking of the decennial and quinquennial censuses of population, agriculture, distribution, etc.

The details of the Bureau's estimates of funds required for the fiscal years 1950-51, 1951-52 and 1952-53 and the actual expenditures during the fiscal years 1950-51 and 1951-52 are shown in Appendix C.

Forms Control Section

The continued expansion of the Bureau has been accompanied by a rapid growth in the number of questionnaires and office forms in use, resulting in substantial increases in the cost of clerical help and mechanical equipment. To cope with the problems involved, a Forms Control Section is being developed in the Administration Division of the Bureau. The function of this Section is to achieve, in so far as possible, the following objectives:

1. Reduction in the number of questionnaires by combining two or more where possible, thus reducing the cost of mailing, addressing, checking

DOMINION BUREAU OF STATISTICS
ADMINISTRATION DIVISION
STAFF ORGANIZATION SECTION

Chart showing function
and organization

DOMINION BUREAU OF STATISTICS
ADMINISTRATION DIVISION

STAFF ORGANIZATION SECTION

Plans and directs operations relating to personnel administration including selection and placement, pay and attendance, and termination of service. Responsible for the administration of the Drafting Unit and has general responsibility for the Health Unit, Department of National Health and Welfare, and the Translation Unit, Secretary of State Department. The staff of the Section numbers 24.

Chief, H.L. Allen, Administrative Officer Grade 3

PERSONNEL UNIT

Carries out operations relating to assignments, promotions, reclassifications, termination of service, etc.
The staff of the Unit numbers 16.

General Staff - 5
Supervisor, Principal Clerk
1 Clerk Grade 4
1 Clerk Grade 3
1 Clerk Grade 2B
1 Stenographer Grade 2B

HEALTH UNIT

A Branch of the Civil Service Health Division of the Department of National Health and Welfare provides a health counselling service and emergency treatment for on-the-job illness and accidents. Employees requiring medical examination are referred to their family physician or to the Health Centre of the Civil Service Health Division where complete advisory and diagnostic services are available.

Staff - 3
Nursing Counsellor-in-Charge, Miss A.C. Fletcher
2 Assistant Nursing Counsellors

CHARTING AND MAPPING UNIT

Prepares economic and statistical maps, charts, diagrams, etc., for all Divisions of the Bureau, and at times for other government departments and agencies.

Staff - 1
Supervisor, Technician Grade 3
1 Clerk Grade 4
2 Clerks Grade 3
1 Clerk Grade 2B
1 Clerk Grade 2A

TRANSLATION UNIT

A branch of the Secretary of State Department located in the Bureau. Prepares translations of Bureau publications and other documents as required.

Staff - 11
Chief Translator, E. Boucher
9 Translators
1 Clerk Grade 3

ATTENDANCE
RECORDS

Staff - 3
1 Clerk Grade 3
1 Clerk Grade 2B
1 Clerk Grade 2A

STAFF AND PAY
RECORDS

Staff - 8
1 Clerk Grade 4
1 Clerk Grade 3
1 Clerk Grade 2B
2 Clerks Grade 2A
1 Stenographer Grade 2A
1 typist Grade 2A
1 Clerk Grade 1

DOMINION BUREAU OF STATISTICS
ADMINISTRATION DIVISION
OFFICE SERVICES SECTION

Chart showing function
and organization

DOMINION BUREAU OF STATISTICS

ADMINISTRATION DIVISION

OFFICES SERVICES SECTION

The function of this Section is to render to the various Divisions of the Bureau the specific office services for which it has been made responsible. In general, it plans, directs, and co-ordinates the allocation of office and storage space, the procurement, maintenance, transportation and distribution of equipment, supplies and mail, telephone and teletype services, the preparation of copy for reproduction by offset printing, and the duplication of various questionnaires, reports and other printed matter. The staff of the Section numbers 69.

Chief, C. W. Nickel
Supervisor of Office Services, Grade 5

BUILDING SERVICES UNIT

Plans, negotiates, and issues requisitions for equipment and services which are supplied by Department of Public Works, including office furniture and filing equipment, carpentry, electrical, plumbing and heating, painting and other services; requisitions for telephone services, automobile parking, etc.

Staff - 2

- 1 Clerk Grade 3
- 1 Clerk Grade 2A

SUPPLIES UNIT

Investigates demands for office machines and supplies and arranges for their procurement and distribution. Responsible for the maintenance of office machines and equipment. Receives, stores, and distributes office supplies and equipment to the Central and Regional Offices, inspects supplies and checks against invoices and requisitions, and maintains perpetual inventory and procurement records.

Staff - 4

- Supervisor, Principal Clerk
- 1 Clerk Grade 2B
- 1 Clerk Grade 2A
- 1 Messenger

MAIL AND MESSENGER UNIT

Receives and sorts all incoming mail and distributes it to the various Divisions of the Bureau, re-registers and transmits mail containing money, cheques, money orders or postage stamps, collecta, meters, and sends all outgoing mail, and coordinates a parcel truck for mail delivery and collection as well as other Bureau delivery and collection requirements.

Staff - 8

- Supervisor, Senior Messenger
- 1 Clerk Grade 2B
- 1 Clerk Grade 2A
- 3 Clerks Grade 1
- 1 Messenger
- 1 Truck Driver

Mechanical Equipment

- 1 Mechanical Letter Opener
- 2 Postage Meters and Stamps
- 1 Mailbox
- 1 Recycling Time and Date Stamp
- 1 Parcel Truck

COMPOSING UNIT

Plans, directs, and co-ordinates the work of various Bureau releases, questionnaires, etc., directed on layout and format of publications and maintains contact with the printing plant on these matters.

General Staff - 2

- Supervisor, Technician Grade 2
- 1 Clerk Grade 4

CENTRAL STENOGRAPHIC AND TYPING UNIT

Stenography. Transcribes the dictation of letters, reports, etc., as required by Divisions of the Bureau which do not have stenographic services or for Divisions whose stenographic staff cannot cope with peak periods.

Typing. Prepares the copy of certain daily, weekly, monthly and annual reports, schedules, etc., to be reproduced by photoduplication, directly typed metal and paper plates, traces various lists and card records as required.

Staff - 30

- Supervisor, Clerk Grade 4
- 1 Stenographer Grade 1
- 1 Stenographer Grade 2B
- 2 Stenographers Grade 2A
- 2 Stenographers Grade 1
- 1 Part-time Stenographer
- 2 Typists Grade 2B
- 2 Typists Grade 2A
- 1 Typist Grade 1
- 1 Clerk Grade 2B
- 1 Office Appliance Operator Grade 2A

Mechanical Equipment:

- 11 B.M. Electric Typewriters
- 21 Typewriters

ADDRESSOGRAPH UNIT

Addresses questionnaires, form letters, follow-up notices, envelopes, etc., from a file of some 100,000 addressograph plates, comprising agricultural, 300,000 industrial, 60,000 financial, 25,000 commodity, 10,000 equipment, 31,000 merchandising, 20,000 miscellaneous 2,000. Prepares card lists from addressograph files for particular surveys and embosses all plans for new lists, additions, and corrections.

Staff - 12

- Supervisor, Clerk Grade 4
- 1 Clerk Grade 2B
- 3 Office Appliance Operators Grade 2B
- 2 Clerks Grade 2A
- 4 Office Appliance Operators Grade 2A
- 1 Office Appliance Operator Grade 1

Mechanical Equipment

- 4 Addressograph Graphotype Embossing Machines
- 4 Cissin 1900 Addressing Machines
- 1 Cissin 1200 Addressing Machine
- 3 Cissin 1400 Addressing Machines
- 1 Cissin 500 Addressing Machine
- 2 Davidson Folding Machines

MACHINE SHOP

Maintenance and repair of specialized equipment.

Staff - 1

- Assistant Technician Grade 3

PLANNING, DRAFTING, AND CORRECTING SUB-UNIT

Examines manuscripts and determines its arrangement and spacing for composing by Vari-Typer Machines and ruling by drafting personnel. This includes the layout of tables, footnotes, text matter, etc.

Staff - 9

- 1 Typewriter
- 4 Clerks Grade 4
- 1 Clerk Grade 3
- 1 Clerk Grade 2B
- 2 Clerks Grade 1

VARI-TYPER SUB-UNIT

Composes matter for photo-offset printing on Perma Design Model Vari-Typer Machines; composes photo-copy of all revised questionnaires, forms, etc., as submitted by the Perma Control Section

Staff - 30

- 4 Office Appliance Operators Grade 3
- 2 Office Appliance Operators Grade 2B
- 6 Office Appliance Operators Grade 2A
- 1 Office Appliance Operator Grade 1
- 17 Machine Operators (Centrex)

Mechanical Equipment

- 30 Vari-Typers (D.S.J. Model)

PRINTING PLANT

A branch of the Department of Public Printing and Stationery (under the jurisdiction of the Queen's Printer), located in the Bureau for the efficient and economical handling of the Bureau's printing requirements. Prints by photo-offset, direct offset, and letter press; reports, memoranda, questionnaires, etc. As authorized by Order-in-Council, the Bureau is charged with direct labour and direct overhead costs of the work done. Paper stock and other materials are supplied at cost. A monthly account is rendered to the Bureau giving a breakdown of labour and material charges. Job costs are maintained and made available to the Bureau when required. The Bureau has the right to determine the order of priority in which the work is handled.

Staff - 29

Foreman, R. Dorion

Mechanical Equipment

- Canon, Vertical Nichols, Ramie 22X34, Webendorfer 17X22, 2 Rotaprinter 14X17, 2 Davidsons, Baum Folder 22X34, Drilling Machine, Small Folder, Kudo, and Auxiliary printing plant equipment.

DOMINION BUREAU OF STATISTICS
ADMINISTRATION DIVISION
COST CONTROL SECTION

Chart showing function
and organization

**DOMINION BUREAU OF STATISTICS
ADMINISTRATION DIVISION**

COST CONTROL SECTION

Responsible for the preparation of the estimates of funds required and the control of expenditures within the governmental regulations.

Chief, D.F. Ritchie, Departmental Accountant Grade 5

1 Principal Clerk
2 Clerks Grade 3
1 Clerk Grade 2B
1 Stenographer Grade 2B

ESTIMATES

Estimates are prepared from information obtained from the Divisions of the Bureau and records of previous years expenditures in the form specified by Treasury Board to show specific items of expenditure. These estimates are included in the Department of Trade and Commerce estimates which are submitted to Treasury Board for recommendation to Parliament.

EXPENDITURES

TREASURY BOARD

Submission for authority for special expenditures or those of a contractual nature.

COST ACCOUNTING

An internal system of cost accounting is maintained in order to ascertain the operating cost of each Division and Section of the Bureau, indicating the main items of expenditure such as salaries, supplies, printing, tabulation, etc.

**OFFICE OF THE
COMPTROLLER
OF THE
TREASURY**

**CHIEF TREASURY
OFFICER
DEPARTMENT OF
TRADE AND
COMMERCE**

The payment of all accounts, with the exception of salaries in accordance with financial encumbrances and vouchers, submitted by Dominion Bureau of Statistics.

**CENTRAL PAY
OFFICE**

Payment of staff salaries, semi-monthly, in accordance with staff pay-certificates forwarded by the Staff Organization Section through the office of the Chief Treasury Officer, Department of Trade and Commerce.

in returns, editing, etc., as well as improving relations between the Bureau and reporting individuals or firms.

2. Reduction in the number of office forms, particularly those used for transcription of information from questionnaires as a means of assembling statistical data into usable form.
3. Prevention of duplication of questions.
4. Simplification of format so as to facilitate tabulation of the statistics in the most economical manner and the shortest possible time.

Methods designed to attain the above objectives include:

1. A printing requisition specifying quantity, date required, etc., must be completed for each form required and this, together with a draft of the proposed form, submitted to the Forms Control Section. From the file of these requisitions a printing schedule for all forms can be drawn up and bottlenecks in the Printing Unit eliminated. The routing of all requisitions and drafts of forms through the Forms Control Section will facilitate the examination and re-designing of forms as time is available.
2. Identifying forms. Forms can be identified and filed more readily from numbers than from titles. Each form is therefore identified by a number consisting of four parts – the Division and the Section where the form originated, the form number, and the date of submission for printing. Thus, forms are readily segregated as to the Division and Section of origin, and, since only the date of submission for printing changes on a form at each revision, it is possible to relate the various stages of revision of a form throughout its existence.
3. Maintaining a complete file of forms. This file includes the original form or draft, an analysis

of the form where necessary, a layout of the form with sufficient detail for the Printing and Composing Units, six copies of the form each time it is printed, and the photocopy. Retention of the photocopy permits revision of forms at relatively little extra cost.

4. Maintaining records of chargeable and non-chargeable time. These records, together with the printing costs, are used by the Cost Control Section to ascertain the overall cost of each form. A summary of non-chargeable time is also kept since it, too, forms a vital cost of each job. An analysis of forms' costs is useful in determining where savings can be made in composing, printing, etc.
5. Reviewing and designing of forms. This is, of course, the basic function of the Forms Control Section. Every form must be analyzed thoroughly and designed or re-designed to insure economy and speed in tabulation, permit the best use of paper stock, and show the necessary composing and printing instructions.

Initially thorough analysis and design of forms can be carried out only with respect to new forms and to those printed in large quantities. As time permits, however, all forms will be examined and re-designed if necessary.

6. Establishing a functional file of subject matter. This is to prevent duplication in the collection of information. All questionnaires are analyzed and filed according to content of requests for statistical information so that pertinent information can be passed on to Directors and Chiefs concerned.
7. Methods and procedures studies. These include an examination of the use to which each form is put, what statistical data are required, how the information is classified, how it is assembled, and so on.

DOMINION BUREAU OF STATISTICS

AGRICULTURE DIVISION

The present organization for agricultural statistics in Canada was developed primarily for two reasons. Firstly, to provide Canada totals for the various series collected by individual provinces and to obtain statistics in provinces where none was being collected, and, secondly, to have a central agency responsible for the co-ordination of statistical work to avoid duplication in collection and to promote uniformity in methods of compilation and interpretation.

In the field of agricultural statistics prior to 1908 there were no estimates covering the whole of Canada with the exception of those gathered at intervals by the Census. In 1908, a permanent Census and Statistics Office was established under the Minister of Agriculture. Duplication in statistical work still continued after 1908 and a Commission of Inquiry established in 1912 recommended that a Central Bureau be established to bring under direct control all statistics except those collected by departments as part of their departmental administration, supervising these latter, and establishing a system of co-ordination with Provincial Governments in the collection of statistics. In 1918, the present Bureau of Statistics was created to carry out these functions. Since 1918, work in agricultural statistics has developed gradually to the point where most of the important requirements for agricultural statistics are being met.

Within the Bureau of Statistics two bodies deal principally with agricultural statistics, the Agriculture Section of the Census Division and the Agriculture Division. The Census Division is concerned with collecting and compiling the decennial census data for all Canada and the quinquennial census of the Prairie Provinces, while the Agriculture Division is responsible for current intercensal estimates pertaining to agriculture. The estimates include the production, inventories, and value of practically all commodities produced on farms.

Organization

The **Agriculture Division** is divided into three Sections — Crops, Live Stock, and Research and Compilation.

The **Crops Section** is divided into the following Units: Crop Reporting, Special Crops, Grains, and Milling. This Section is responsible for estimates of acreage, yield, and production of all field crops and special crops, including fruits and vegetables. A monthly census of sugar refineries, flour mills, and oil crushers is also conducted. Food balance sheets and consumption of food per capita statements are prepared in this Section and two reports of an analytical nature are also published—*The Wheat Review* (monthly) and the *Coarse Grains Quarterly*.

The **Live Stock Section** has four Units: Live Stock Estimates, Dairy, Poultry and Furs, and Cold Storage. The Live Stock Section is responsible for the semi-annual live stock and poultry estimates, annual wool and meat statistics, monthly statistics on eggs, milk, milk products and reports on cold storage holdings of agricultural food products.

The **Research and Compilation Section** is divided into three Units: Compilation, Research, and Farm Finance. The Compilation Unit edits and compiles the semi-annual acreage and live stock surveys and doubles as a work pool for other Units. The Farm Finance Unit has charge of the primary surveys of prices received and wages paid by farmers; is responsible for the construction of the monthly index of farm prices and the annual index of farm production; undertakes the secondary documentation of farm cash and net income received by farmers, and prepares annual statements of the value of agricultural production, farm capital, and the average value of farm lands. The Research Unit undertakes inquiries into processing and estimating procedures for voluntary mail sample surveys both current and historical. Members of this staff co-ordinate research undertaken throughout the Division.

Co-ordination of Work within the Division. — The Director of the Division is responsible for general administration and for the integration and co-ordination of work within the Division. He is responsible for general policy in the development and improvement of agricultural statistics, for liaison with departments, boards, commissions and committees of Federal and Provincial Governments in matters of policy, and also for maintaining and improving co-operative arrangements.

The physical organization of the Division provides the framework for general administration and the integration of work within the Division. The Crops Section and the Live Stock Section, as the titles imply, are concerned with all work pertaining to crops and grain products and to live stock and animal products respectively. The Research and Compilation Section is a general section dealing with work and problems relating to the Division as a whole, including farm income, price and production indexes, compilation of general surveys, and research. This principle of grouping according to classes of agricultural commodities is continued in the sub-division of the Sections into more specialized Units, although the sub-divisions are based partly on similarities in operational procedures. While the allocation of work within the Division adheres closely to the organizational framework, considerations of staff and seasonality of work necessitate some exceptions.

Within this organizational framework, the three Section Chiefs are directly responsible to the Director and, in his absence, to the Assistant Director (Chief of the Crops Section). Unit supervisors are responsible to their respective Chiefs or to a professional or technical officer designated by the Chief.

While much of the work of the Division involves clerical routine and does not require frequent review and discussion, certain procedures have been established to assist the Director and professional staff in maintaining not only a perspective of the Division's work but also considerable knowledge of the co-ordinated detail. One such procedure is the daily circulation among professional staff of all out-going correspondence and in-coming correspondence to which it relates. Supplementing this a central registry of files in the Division is currently being constructed. A definite but flexible pattern for all files has been established on the basis of operational steps which are fairly uniform throughout the Division. In this connection, record forms have been established for many of the Division's primary surveys, on which are summarized the results of tabulation and the various operations of estimating. The system of record forms will be extended to other surveys as time permits. Informal estimate panels composed usually of the Director and one or two Chiefs, together with the responsible officer, review the estimates and the accompanying text before release for publication.

In addition to these internal devices for integration and co-ordination of work, the Division organizes and conducts federal-provincial agricultural statistics conferences at which the overall program of agricultural statistics and the detail of particular classes of statistics are carefully reviewed. While the principal purpose of the conferences is to maintain and develop the co-operative arrangements with the provincial statistics offices, the secondary purpose of integration and co-ordination of work within the Division is also served.

Methods of Collecting the Basic Data

All basic data collected by the Agriculture Division are obtained through mail questionnaires. Some are obtained by the personal interview method, but usually such inquiries are undertaken by the Special Surveys Division or the Census Division. Official agricultural data pertaining to economic conditions at the *farm level* are based primarily on data collected by the Agriculture Division through sample surveys of the voluntary mail-questionnaire type, while data pertaining to *processed farm products* are generally collected by compulsory mail-questionnaire census surveys. The latter are collected in some instances by the Agriculture Division and in others by the Census of Industry. The problems of assembling and maintaining mailing lists and of constructing questionnaires are discussed below with reference to specific surveys.

The June and December Surveys of Crops and Live Stock are the two major sample surveys of producing units in Canada at the farm level. Both collect data respecting the farmer's own farm. The June Survey collects data on acreages sown to individual crops, farm inventories of live stock and poultry, production and disposition of live stock and numbers of labourers on farms at June 1. The December Survey collects similar data on live stock, poultry, and farm labour and, in addition, total wages paid during the calendar year and data on abandonment or diversion of acreages in four principal crops. Because of the importance of the estimates derived from these data in the national system of agricultural statistics, and because of the expressed desire of the co-operating provincial agencies for estimates for crop district areas within each province, as large a sample as possible is sought and an attempt is made to distribute the questionnaires for the two surveys to every farmer in Canada.

Currently, the questionnaires are distributed directly to individual farmers by mail in all provinces except Quebec and Ontario. Mailing lists have been assembled from the 1951 Census of Agriculture for the three Maritime Provinces of Prince Edward Island, Nova Scotia, and New Brunswick and similar lists will be in operation for British Columbia and the three Prairie Provinces within the year. The lists now used for the Prairie Provinces were assembled from the 1946 Census of Agriculture (Prairie Provinces), with subsequent deletions and additions of names for deaths and transfers as reported in the surveys. The British Columbia lists are currently derived from the rural directories of the Post Office Department. The lists constructed from the Censuses of Agriculture have been placed on addressograph plates and a code respecting the location and size of farm has been included directly on the plate. The name, address, and code are printed directly on the questionnaire, using the addressograph plates, and a return post-free envelope is enclosed with the questionnaire in an out-going "window" envelope.

For Ontario, the questionnaires are distributed through the rural route services of the Post Office Department. Bundles of individual questionnaires (enclosed in post-free return envelopes) are mailed to all post offices having rural routes, each bundle having an official directive slip requesting the postmaster to distribute one of the envelopes to each farmer on his rural routes. This method of distribution is supplemented by direct mailing to farmers in areas where the coverage of farmers by the rural route service is inadequate. Evidence available indicates that over 90 per cent of Ontario's farmers are reached by this combination method.

In Quebec, the questionnaires are distributed to farmers through the school system, the school teachers distributing the questionnaires and return envelopes through the school children to the parents. The completed questionnaires are returned through the teachers, the questionnaire being sealed in the individual return envelope by the farmer.

The method of distribution through the schools was the principal medium in most provinces in earlier years but has been retained only in the province of Quebec where the number of returns has been of the order of 45,000. The number of returns in other provinces by the school medium of distribution was becoming progressively smaller and the alternative distribution methods outlined above were introduced to obtain a larger coverage. This has resulted in considerably increased returns and at the same time has improved the geographic representativeness of the samples. The number of returned questionnaires currently approximates eighty to ninety thousand which is about 14 per cent of the 620,000¹ farms reported in the Census of Agriculture.

The questionnaire used for the June and December Surveys is a pegboard-type questionnaire introduced in December, 1948. Prior to that time a card schedule was used. The pegboard schedules have proved very satisfactory, their clarity and simplicity contributing much to accuracy and ease of response and to facility in tabulation. In contrast, the card schedules tended to over-crowding and were more suitable for personal interview surveys and counter-machine methods of tabulation.

The collection of virtually all other basic data at the farm level is made by mail questionnaires of the pegboard type distributed to selected correspondents. The selection of correspondents takes into consideration the need for geographic representation in the sample and other factors such as size of enterprise. Construction and maintenance of the corps of correspondents are based on lists of potential reporters provided by the co-operating provincial statistical offices, alternates suggested by retiring correspondents, and names culled from returns of the major June and December Surveys.

These selected lists of correspondents are distinguished as follows with the approximate number of current reporters and the nature of the data collected indicated for each:

1. Crop Correspondents: 10,000 farmers and 3,000 non-farmers reporting monthly during the growing season respecting acreage intentions, condition and yield of crops, stocks of grain on farms, grain fed on farms, the progress and rate of seeding, winterkilling, threshing dates, and fall ploughing. Both own-farm and neighbourhood data are collected.
2. Domestic Fowl Correspondents: 3,900 producers reporting monthly their farm inventories of live birds and production and disposition of poultry, meat, and eggs on their own farms.
3. Turkey, Geese, and Duck Correspondents: 3,000 producers reporting periodically their farm inventories of live birds and production and disposition of meat on their own farms.
4. Dairy Correspondents: 5,500 farmers keeping cows for milk purposes, reporting monthly on production and utilization of milk on their own farms.

5. Farm Price Correspondents: 4,000 farmers and dealers reporting monthly the price received at the farm for specified farm products in their neighbourhood; periodically they also report numbers of farm labourers on farms and wage rates.
6. Shorn Wool Correspondents: 1,100 producers reporting number of sheep shorn and production of wool on their own farms.

Finally, the Division collects some basic data at the farm level by mail questionnaire survey of producers of other commodities. Questionnaires are distributed to approximately 5,000 vegetable producers, 30,000 registered beekeepers, and 11,000 producers of maple syrup, respecting production of their commodities. Returns to these surveys are voluntary. A compulsory census survey of fur farmers is conducted annually using a complete mailing list of fur farmers provided by the co-operating provincial statistical agency. In addition, a selected sample of these fur farmers is used annually to solicit data by mail questionnaire respecting the anticipated fur pelt production. Pegboard-type questionnaires are used.

A considerable amount of data respecting processed agricultural products is collected by the Division. Data respecting production of processed products and utilization of unprocessed farm products, as well as stocks, are obtained by monthly mail questionnaire from all the larger flour mills and most of the smaller ones, from grist and chopping mills, and from oil crushing mills. The mailing lists for these surveys are obtained from other government departments concerned with licensing and from trade journals. A complete census of Eastern Elevators is conducted weekly for receipts, shipments, and storage of grains.

Data supplementing surveys at the farm level are collected by mail questionnaire from vegetable processors respecting contracted acreages and from sugar refiners regarding acreage and production of sugar beets.

In the field of dairy statistics, census surveys of dairy factories and concentrated milk manufacturers are conducted monthly by mail questionnaires, returns to these surveys being compulsory. These questionnaires are card or paper-type printed schedules. Fluid milk and cream statistics are collected by mail questionnaire on a market area sample basis, the mailing lists for the market areas being supplied by the provincial offices (including Milk Control Boards in some provinces).

Storage holdings of food commodities are collected on a census survey basis using a mail questionnaire, the return being compulsory. The data are collected monthly, the questionnaires being sent to cold storage plants, warehouses (including meat packers, abattoirs, wholesale butchers, wholesale grocers, and wholesale produce distributors), creameries and dairy factories, butter and cheese producers, concentrated milk manufacturers, and wholesalers. Data on butter stocks are collected

1. Excluding Newfoundland for which no sample surveys of farms have been undertaken as yet.

weekly by telephone by Bureau representatives in nine selected cities. The mailing lists for these surveys are constructed from lists provided by other government departments, particularly the Department of Agriculture, and from related surveys within the Dominion Bureau of Statistics.

A separate type of basic data concerning crop conditions during the growing season is collected by the Division for use in the Telegraphic Crop Reports and in the Fruit and Vegetable Crop Reports. Data for the "Telegraphic" are forwarded to the Dominion Bureau of Statistics by telegram from specially selected observers throughout Canada, according to pre-arranged procedure. The reports cover the progress of crop growth and related conditions as observed by the reporters who include farmers, dealers, professional agriculturists, and provincial statistical officials. The Fruit and Vegetable Crop reporters include producers, processors, and provincial agricultural officials, who report periodically on growing conditions for fruits and vegetables.

The collection methods within the Division are, of course, influenced by the methods of obtaining the co-operation of respondents. These are discussed below.

Methods of Obtaining Co-operation of Respondents

Measures for obtaining the co-operation of respondents have both general and specific applications. Among the general measures to stimulate reporting of agricultural statistical data, perhaps the most important is the secrecy clause of the Statistics Act which ensures that individual reports will be used for statistical purposes only. Although the Bureau has the legal power to collect returns, including those on a sample basis, the approach in most of the agricultural statistics work is to seek voluntary co-operation of persons and firms in providing the information. The usefulness of the data to both industry and agriculture is also an important factor in obtaining co-operation in the collection of statistics. The form and content of the reports issued have been developed to provide information in what is believed the most desirable way. In addition to regular reports, the Bureau provides an important service in answering special requests for information. Although public relations are in large measure maintained by the service provided by the Bureau, paid advertising is also used to stimulate interest in reporting. This was undertaken in 1950 on a general basis with a direct appeal to citizenship and also a reminder that prompt replies to questionnaires result in more timely information.

The specific measures to stimulate response to agricultural questionnaires may be discussed under three categories. (1) June and December Crops and Live Stock Surveys, where the mailing list comprises the total universe of farmers: (2) Mail questionnaire surveys, where special correspondents report: (3) Surveys which constitute a virtual census.

For the semi-annual surveys (June and December) of acreages and live stock numbers, an attempt is made to place a questionnaire in the hands of each farmer. Apart from the province of Quebec where distribution is made via schools, and Ontario where blank schedules are distributed by rural mail carriers, farmers receive a schedule *addressed to them personally*. In all cases a return post-free envelope is provided so that the farmer is assured that his schedule goes direct to the provincial or federal statistical office as the case may be.

A space in the schedule is utilized to assure the farmer that his report will be used for statistical purposes only and that the survey has no connection with income tax. A further notation emphasizes that the statistics are very important in presenting an up-to-date picture of the agricultural situation.

Appeals are also made to farmers by news items in the farm press, posters displayed in public places, radio announcements, and through addresses to farmer meetings. Provincial departments co-operate with the Bureau in this work. Before each survey the Bureau prepares a press release and copies are sent to all farm and weekly papers. Editors have been very helpful in carrying news items without charge and, in many cases, supplement the news items with favourable editorial comment. The Canadian Federation of Agriculture also aids by bringing the surveys to the attention of their many local units. Copies of the press release are sent to the farm department of the Canadian Broadcasting Corporation and country-wide publicity from C.B.C. stations is obtained throughout Canada. Private radio stations also co-operate by making spot announcements reminding farmers to mail their forms for the major June and December surveys.

Provincial departments are especially helpful in that they are able to reach a large number of farmers personally through their agricultural representatives and field services. Field officers have been asked to put in a good word about the statistical surveys whenever they have an opportunity to do so. The Bureau has provided forms used in the various surveys to each of the provincial departments to be distributed to field officers in order that they may know what sort of information farmers are being requested to give. Most of the provincial departments have news arrangements with local radio stations and arrange for spot announcements about the time the farmers receive the forms. Provincial departments issue press releases and one province uses paid advertising in rural papers to solicit farmer co-operation.

The Bureau undertakes several other mail questionnaire surveys where special correspondents report statistical information. Provinces aid in supplying names, many of which are obtained by personal visits to farmers by agricultural representatives. Country elevator operators, banks, local post offices, and various dealers also aid in acting as special correspondents. Bureau personnel travel to the provinces and head offices of various firms in order to ensure continuous co-operation in obtaining a sufficient number of correspondents.

The correspondents are not paid but the Bureau supplies a farm paper or similarly priced periodical to those who report regularly. Copies of the *Canada Handbook* are also sent to many of the correspondents and, in a few cases, *The Canada Year Book* is provided. Many correspondents also receive copies of the statistical report to which they supply information. These are sent free on request. In certain monthly surveys such as dairy and poultry production, printed forms are sent to correspondents so that they may enter daily production and disposition data. Correspondents often write for information on a wide variety of subjects and special efforts are made to answer all letters promptly.

Maintenance of mailing lists is a problem and, in addition to the above mentioned methods to encourage reporting, the Bureau sends special follow-up letters to those who fail to report in a particular month. These short reminders have proved very effective. (In the dairy correspondents survey, for instance, the response is over 75 per cent). When a correspondent is unable to continue he is asked to submit names of neighbours.

The Bureau conducts only one actual census survey among farmers, namely the annual Fur Farmers Survey. Many report promptly but several follow-up letters and, sometimes, personal visits are necessary to get complete coverage. Provincial government employees aid by personal visits as also do field officers of the Bureau in conjunction with their regular work.

Many firms report to the Agriculture Division on a regular basis. Full coverage of dairy manufacturing plants is obtained monthly; all distributors in controlled milk markets report monthly; flour mills, grain and oilseed crushers, sugar refineries, cold storage warehouses, and certain food wholesalers also report monthly. In all these surveys close to 100 per cent co-operation is received every month. Over the years the firms have found the published statistics useful in their business and, in the majority of cases, they are just as anxious as the Bureau to have complete and timely information concerning production, storage stocks, prices, and so forth for the commodities in which they are interested.

Co-operative Arrangements with Other Agencies

The Bureau has co-operative arrangements with the provinces in the collection and compilation of agricultural statistics and maintains liaison with the Federal Department of Agriculture and agencies such as the Canadian Wheat Board and the Board of Grain Commissioners.

Provincial government agencies aid in the compilation of results for certain surveys. The Bureau has no formal agreements with the provinces in carrying out this work and has no control over policy of the provinces with respect to agricultural statistics. Nevertheless, a high degree of co-operation on a partnership basis has been developed over the years. Motivations for this co-operative

effort come chiefly from mutual desires to avoid wasteful duplication in effort and to provide timely statistics as economically as possible.

The arrangements with the provinces include mutual agreements on the division of work, help in obtaining new correspondents, and agreements on methods to be followed in editing, compiling, and estimating. The schedules in use are discussed and agreed upon. In the crop and live stock estimating work and for some of the annual provincial statements in which provinces co-operate, mutual agreement is reached before publication. In the case of crops and dairy statistics, dates of publication are established. Target dates for other reports are set out at the beginning of each year.

The actual division of work between the provinces and the Bureau varies a great deal for the several provinces. The amount done by a particular province depends somewhat on the stage of development reached when the Bureau came into the picture and the resources available for assuming a portion or all of any new work which occurs. For the most part, the Bureau provides the questionnaires and looks after the mailing with provision of post-free return envelopes to the provinces for surveys tabulated by them. In the large June and December surveys, Ontario undertakes its own tabulation of results in both June and December, Manitoba compiles its returns in June, whereas, for all other provinces the Bureau does the work. The Quebec Bureau of Statistics aids in both surveys by "pairing" the forms with those received in the previous surveys. In the crop estimating work, Ontario, Quebec, and British Columbia undertake their own compilations while Saskatchewan does part of the compilation work. Similar arrangements exist in the monthly fluid milk surveys; the Ontario and Quebec Statistics Offices compile the results for their provinces, the Milk Boards of the four Western Provinces compile data for cities and towns under their control whereas, for the Maritimes and uncontrolled markets in Western Canada, the Bureau does the tabulation work. In the monthly census of dairy factories, the dairy branches of the Provincial Departments of Agriculture and, in some cases, provincial statistics offices tabulate returns and wire results to Ottawa by the 6th or 7th of the following month. The report is generally published by the 10th to 12th. Joint arrangements also exist for surveys of fruits, vegetables, honey, maple products, and fur farming. In Ontario and British Columbia, local committees provide fruit and vegetable crop estimates.

The Federal Department of Agriculture produces a considerable volume of statistics as a by-product of administrative functions and, by mutual agreement, this becomes available for official Bureau use. Cases in point are the detailed statistics on weekly marketings, prices, and slaughter of live stock. Statistics of gradings of dairy products, eggs, fruits, and vegetables also form an important part of the statistics of agriculture. A fairly recent report gives data on monthly chick hatchings. The above is not necessarily a complete list but serves

to illustrate the nature of the material collected through inspection service channels. The Department of Agriculture also aids the Agriculture Division directly in collecting certain types of statistics. Fruit and vegetable inspectors, for instance, obtain reports of stocks in store during the storage season and forward the data to the Bureau. The inspectors in the Production Service provide estimates each year of the production of forage-crop and garden seeds. It would be very difficult to obtain estimates of these crops by the mail questionnaire method. The Bureau also obtains valuable information from special surveys conducted by the Economics Division of the Department of Agriculture.

The co-operative arrangements with the Board of Grain Commissioners and the Canadian Wheat Board can be discussed together. A co-ordinating committee composed of officials from these agencies and the Bureau meets from time to time to determine division of responsibility relative to collection and publication of grain statistics. The Statistics Branch of the Board of Grain Commissioners compiles a great deal of current data on the primary marketings of grain in Western Canada and stocks and movements of grain to all parts of Canada and for export. Weekly reports are issued constituting a virtual census of the quantity of each kind of grain delivered by farmers, stocks of grain in store at various positions, rail and lake movements, prices, and exports. The Bureau publishes much of this information in a weekly report in addition to data on Eastern grain situations. The Board and the Bureau co-operate in the publication of an annual report of the grain trade. The Wheat Board statistical office provides data on permit acreages, intended marketings, and other information required to keep the Agriculture Division in touch with the current marketing position.

Integration of Activities

Integration of the work in agricultural statistics with other government bodies and with other Divisions in the Bureau is carried out through the medium of committees and by personal contact. Liaison is maintained with the provinces by personal visits of federal officers to the various offices from time to time and by an annual federal-provincial conference or meeting each year. In 1950, an agricultural statistician was stationed by the Bureau in the Atlantic Provinces to work directly with Provincial Governments in the development of statistical work. Provincial statisticians frequently visit the Bureau to confer on estimates.

Liaison with the Federal Department of Agriculture is maintained chiefly by personal contact. A formal interdepartmental committee has been established, however, and six sub-committees are functioning, viz., field crops, fruits and vegetables, live stock, dairying, poultry, and farm finance. National association representatives such as officials of the National Dairy Council and the Canadian Federation of Agriculture are called into these meetings from time to time.

A co-ordinating committee composed of statisticians from the Bureau, the Board of Grain Commissioners, and the Canadian Wheat Board meets from time to time to discuss statistics relating to grain marketing. In this connection, liaison is also maintained with the Wheat and Grain Division, Department of Trade and Commerce.

Within the Bureau, Divisions other than the Census and the Agriculture Division provide data relating to agriculture, particularly with respect to the processing and utilization of agricultural products. The Industry and Merchandising Division makes periodic surveys of a number of industries related to agriculture—milk businesses, canners, meat packers, and so forth. The Labour and Prices Division maintains an index of wholesale prices of farm products, an index of the cost of things farmers buy as well as a farm family cost-of-living index. The Special Surveys Division makes quarterly estimates of the farm labour supply and undertakes special inquiries to provide additional statistical material about agriculture. The Agriculture Division maintains close touch with all this work by personal contact and through liaison committees. Of importance, too, is a joint National Income and Agricultural Farm Finance Committee which co-ordinates the work of providing agricultural data needed for national accounts.

Processing the Basic Data

Processing operations are herein considered to include follow-up, editing, tabulation, and, in the case of sample surveys, the choice and interpretation of the sample indications.

The basic data returned to the Agriculture Division are scrutinized by the clerical staff for consistency within the individual farm or firm questionnaire and also in relation to the general tenure of answers to the same question or groups of questions on all returned questionnaires. For the sample surveys at the farm level, the finding of inconsistencies may lead to rejection of the answer for the particular question, section of questions, or in some cases the entire questionnaire, but first an attempt is made to salvage the return by revising the report where possible. The preference has been to reject rather than to revise unless the accuracy of the revision is fairly obvious. For the farm surveys, an occasional check by letter to the respondent is made but, with the exception of the Dairy Correspondents Survey, limitations of time and staff have permitted little follow-up of either apparent inconsistencies or non-respondents. In contrast, considerable checking back by letter is practised for returns from non-farm surveys when inconsistencies are noted. In addition, for census-type surveys of fur farms and of non-farm units, the follow-up of non-respondents is an essential part of the survey operation.

Tabulation of the basic data is undertaken after editing. Data obtained on pegboard-type questionnaires are added on pegboards, and the advantages of this simple tabulation method have been so

evident in practice that as many of the Division's surveys as possible are being converted to peg-board operations. For those surveys not adapted to the pegboard technique, the data are transcribed to ledgers or listing sheets both for record purposes and for tabulation, the adding being undertaken usually with tape-type adding machines. For some types of data, e.g., values per head of live stock, frequency distributions are constructed and totals are calculated from the distributions of grouped data. As yet, very little cross-classification of data has been attempted and the use of punched cards and machine sorting and counting has not been necessary.

Tabulation of farm samples is conditioned by the choice and interpretation of sample indications in deriving official estimates therefrom. The most common sample indication used from farm surveys in the Division is the paired or matched farm sample ratio of change between surveys. The bias inherent in sample surveys in which the selection of respondents is not random, is expected to be less in the matched farm indication of change, and there is some increased estimating efficiency where the item being estimated is a consistent feature of farms from survey to survey. In addition, the matched farm samples facilitate editing. For the general June and December Surveys of Crops and Live Stock, the non-paired portion of the currently received sample is also tabulated and sample indications from the total sample are derived and used for estimating purposes. The starting point for measurements of change from survey to survey (for acreages and farm inventories of live stock) is the Census of Agriculture "benchmark" data and, of course, the same data provide an ending benchmark for the previous intercensal period. Normally, revision of the intercensal period estimates is necessary to render the historical series of estimates consistent with the Census of Agriculture benchmarks. Unfortunately, though a bias in an annual change-ratio may not be sufficient to distort unduly the year to year comparisons of estimates, its accumulation over a ten-year period significantly affects the level of the estimates in the later years of the period.

Appraisal of Statistical Series

The scope of statistical surveys undertaken by the Agriculture Division has changed materially in the last thirty years. In the beginning, the Division provided statistics on the production and value of a number of farm products. Later, series on farm prices, stocks, and utilization were added and still later, data were combined to provide series on farm cash and net income, the physical volume of agricultural production, indexes of prices received by farmers, and food balance sheets. Provision of statistics has necessitated some analytical work and, for grains, two reports are published reviewing supply and demand conditions. There has been a growing need for statistics to satisfy the requirements of international agencies such as the

Food and Agriculture Organization as well as to meet the demands of government departments. These require not only basic statistics on production and distribution but also forecasts for prices, production, and income.

At the present time, a fairly complete service is being rendered but the scope could be extended to provide data for areas within provinces and at more frequent intervals. Then, too, alternative methods of obtaining data for new surveys and to improve the quality of some of the existing series may have to be considered. The demand for statistics is, of course, not static and further developments depend on the growth of public demand and the necessary expansion in staff to meet such demand. There are three aspects, therefore, to consider in viewing the future need for agricultural statistics, viz., statistical gaps now known, appraisal of quality of present series, and the program for improvement.

The gaps in agricultural statistical services are of three types: those requiring new series, those requiring more frequent surveys, and those requiring more detail from existing surveys. The demand involving secondary documentation may indirectly create demand for primary data essential to that documentation. For example, the Bureau has frequently been asked to provide farm cash and net income statistics for areas within provinces. This would entail action with respect to all three types of "gaps". New surveys on farm expenses would be required as well as more detailed and more frequent information, particularly on grain sales in Eastern Canada and on live stock sales throughout Canada. Within the Bureau there is a considerable demand for a quarterly statement on net income for each province.

There is a considerable demand for quarterly surveys of live stock production, especially for hogs. This would require an extension of the semi-annual live stock surveys to obtain not only the current live stock position but also the intentions of farmers with respect to production and disposition. As indicated above, such extension of surveys would be a prerequisite to more frequent farm net income reports.

Another important need for additional statistics relates to food consumption estimates. The present series for many of the commodities are rather rough approximations because sufficient information is not available with respect to stocks and distribution, particularly waste. Currently, an inter-divisional committee in the Bureau is investigating the consistency of food consumption series of the Agriculture Division and the personal expenditure series on food prepared in the Research and Development Division. Examples of requirements in food statistics are stocks of flour at the wholesale level, and objective data on non-food uses of potatoes. With respect to fruits and vegetables, a great deal of information would be required to

obtain total consumption of such commodities. At present, statistics are available for commercial production only.

Further data are needed to improve live stock and poultry production statistics which are used for meat consumption and income estimates. Total sales off farms are estimated by means of a balance sheet of production, changes in inventories, farm utilization, and losses. The commercial portion of the sales off farms is compiled from inspection records of the Department of Agriculture. Surveys are required to check the residual "non-commercial" portion, i.e., sales to local butchers and to small abattoirs not under Federal Government inspection. Surveys are also required to obtain weights of slaughter of this portion of sales.

Assessment of the quality of the statistical services provided by the Division is difficult even when the term quality is interpreted in the limited sense of reliability. The sample surveys conducted by the Division are not random in selection of respondent and the error of estimates derived from them cannot be calculated. For such sample estimates and for estimates compiled from census-type surveys, reliability must be judged by comparison with independent objectively determined aggregates or standards, or by construction of balance sheets in which independent aggregates are key elements. The sources of independent check data include the Census of Agriculture, Canadian Wheat Board, Board of Grain Commissioners, Federal Department of Agriculture, other federal departments, provincial departments, and a number of other agencies.

The Census of Agriculture data on the number of producing units, i.e., crop acreages and numbers of live stock on farms, are essentially the foundation upon which the Agriculture Division's statistical services have been built. They serve as bench-marks in historical series and they constitute the principal standards by which the reliability of the intercensal estimates of producing units is evaluated. The ten-year intercensal period for all but the Prairie Provinces has proven long and hazardous respecting estimates of the less widely grown crops. For the principal crops, reasonable reliability has been attained for national estimates and even for those on a provincial level. Respecting live stock inventories, the semi-annual estimates, judged in relation to the Census of Agriculture data, appear to reflect year-to-year changes fairly well but, over the ten-year period, tend to accumulate errors in absolute level. More frequent bench-marks and independent objective standards would assist greatly in improving the quality of the basic estimates of producing units on farms in Canada.

Crop production estimates which are derived from yield per acre surveys and the annual acreage estimates are checked annually for the principal grain crops by balance sheets. For the major grain crops, the balance sheet check indicates that satisfactory production estimates are being pro-

duced, particularly in the Prairie Provinces. For some special crops like sugar beets, tobacco, peas (in some provinces), and oilseeds, data on acreages and production are available from processors. For other crops, particularly fodder crops, objective checks are lacking, chiefly because so little is marketed off the farm.

For fruits and vegetables, the scope of the estimates includes only commercial production, and information is meager, except for tree fruits. Information is available from processors on quantities of fruits and vegetables used in canning and preserving but data respecting sales of fresh fruits and vegetables are incomplete. Hence, it is not possible to check the accuracy of these estimates in a satisfactory manner.

As regards live stock and live stock products statistics, the reliability of much of the estimating in this field depends in large measure on the accuracy of estimates of producing units discussed above. Production of live animals is directly related to inventory numbers through methods of estimating employed. Hence, the conclusions respecting the reliability of meat estimates are similar.

Dairying statistics are collected through an annual census and regular monthly censuses with respect to manufactured dairy products, and through mail questionnaire sample surveys with respect to milk sold for fluid purposes and milk utilized on farms. Total milk production is the sum of these three categories. Respecting fluid milk sales and farm utilization, data from the Census of Agriculture provide the bench-mark for the monthly and annual estimates. The census data for these commodities prior to 1951, however, have been subject to memory bias because they pertained to the calendar year beginning 18 months prior to the census date of enumeration. In the 1951 Census of Agriculture the data pertain to the month preceding the date of enumeration and memory bias is expected to be negligible. Despite the expected minimizing of this memory bias, the long period of time between bench-marks prevents satisfactory evaluation of the quality of those dairy statistics derived from sample surveys.

An active program for the improvement of statistical services is being carried on within the Agriculture Division. A Research and Compilation Section was organized in 1946 within which a Research Unit was established with the specific responsibility of reviewing and advising on methods. Much time has been devoted to organization of survey work including collection, processing, and interpretation of sample indications and the provision of an adequate system of records. Searching and rearranging of past records has been a major project in preparation for intercensal revisions of the period 1941-51. Such records are prerequisite not only for appraising past performance but for developing improved methods of estimating.

For primary statistics at the farm level, it is expected that voluntary mail sample surveys will

continue to be the principal basis for estimates. It is recognized that the cost factor may limit the use of random sample surveys to the provision of more frequent bench-marks and check information.

The principal problem with samples which are not random is the control and, to some extent, the minimizing of bias. The program directed towards this end includes provision for a more complete description of the agricultural universe through the 1951 Census of Agriculture. When the details from the Census become available, a major project is planned to investigate the nature of the bias in farm survey samples and the possible advantages of stratification in bias control. Current estimating methods of measuring changes from survey to survey accumulate the estimating error of individual surveys and, particularly when that error is of the bias type, the accumulation between bench-marks can be significantly large. A study of alternative methods which do not entail the accumulation of error is planned. One approach which has proven useful in the United States is the use of the regression of the official estimates on sample indications.

Regardless of efforts to "manage" the voluntary sample surveys, more frequent objective checks are necessary not only to provide bench-marks for the several series but to enable appraisal of the results of such management. It is expected that more frequent objective data will be forthcoming from periodic random sample surveys of both the mail-questionnaire and personal-interview type. Other sources of check data may become available through economic surveys conducted by other departments or as by-products of administrative functions.

A further means of improving statistics is isolation of gross errors by quantitative study of economic relationships. The internal consistency of related series can be checked by this type of analysis and it is planned to carry out more of this work within the Bureau.

The program for improvement of statistics derived from census-type surveys concerns simplification of questionnaires and methods of tabulation. For many of these surveys timeliness and cost are important and consideration will be given to possible use of sampling for preliminary estimates.

With respect to secondary documentation, much of the improvement will result from improvements in primary statistics as outlined above. Further clarification and more general acceptance of preferable concepts are necessary in the field of farm income. The development of long-time series on gross and net value of agricultural production is desirable to replace the present aggregate series which contains considerable duplication. With respect to farm expenses, a random sample survey was undertaken this year to provide much needed detail to replace data carried forward by projection of 1941 Census of Agriculture data.

An example of the improvement in the statistical service of the Division is the preparation of historical tables of each series of statistics and their publication in convenient form in the *Handbook of Agricultural Statistics*. The Handbook is issued in loose leaf form to enable early release of its several parts and substitution of revised data as they become available.

Uses of Various Statistical Series

Perhaps the most comprehensive use of agricultural statistics is that made by the annual Federal-Provincial Conference on Agricultural Production. Each year, comprehensive analytical statements on the agricultural situation and outlook are published by this conference, based in large part on statistical series provided by the Agriculture Division of the Bureau. This information is brought directly to the farmers' attention largely through the extension services of government departments and through the activities of farm organizations such as the Canadian Federation of Agriculture.

Farm organizations make wide use of the whole field of agricultural statistics in presenting briefs on behalf of their members and in developing recommendations on agricultural policy. Farmers themselves are making increasing use of prices, production, and marketing statistics in planning their operations.

The Food and Agriculture Organization has as one of its principal objectives the provision of accurate statistics relative to the world's supply of foodstuffs. As a member of FAO, Canada is pledged to provide regular data on agricultural prices, supplies, and production and these are furnished by the Agriculture Division.

Another major user of price and production statistics is the Agricultural Prices Support Board. This organization was set up under the provisions of the Agricultural Prices Support Act of 1944 to ensure adequate and stable returns for agriculture by promoting orderly adjustment from war to peace conditions, and to secure a fair relationship between returns from agriculture and those from other industries. Prices data are of particular importance to this Board and, in the immediate postwar years, it assisted in the setting up of the Bureau's Farm Price Index.

With respect to known uses of particular series within the agricultural statistics field, a few of the more important cases are listed below.

Crop Acreage, Production and Stocks Estimates, and Grain Statistics. — The Bureau's official crop estimates are widely used by business firms. Financial institutions and transportation agencies which contribute significantly to the smooth and effective movement of grain from farmers' hands to ultimate consumers at home and abroad, are particularly interested in early crop production estimates. Knowledge of the prospective size and distribution of the new crops enables financial

institutions to make efficient arrangements in advance for credit extension to farmers and marketing agencies. Railway agencies are able to effectively allocate rolling stock and plan train schedules for expeditious movement of the crops to market. Transportation groups concerned with lake and ocean shipping are vitally concerned with the present and future position of grain stocks within the country to enable efficient allocation of cargo space. The weekly series respecting receipts and shipments at both country and terminal elevators, stocks on hand and in transit, etc., is designed to meet this demand.

Processing firms are also among the principal users of crop statistics. Millers, oilseed crushers, malsters, and others are anxious to know the potential supply position of their raw materials as early as possible. Binder twine and farm machinery companies plan their season's activities early in the spring and study closely the official crop reports relative to changing demand conditions for their services.

Government departments and agencies make extensive use of crop and grain statistics. Obviously, such data play a key part in the operation of the Canadian Wheat Board and of the grain trade in general.

Live Stock Statistics. — The Agriculture Division makes semi-annual estimates of numbers of live stock on farms and of farmers' intentions respecting production and disposition of livestock in the months to come. Such information is used by packers, processors, and transportation firms concerned with the procurement and movement of animal products to both domestic and foreign markets.

As in the case of crops, and for similar reasons, financial institutions and other business firms serving the farmer are concerned with obtaining at the earliest possible time all available data on the live stock situation. Government departments, both federal and provincial, use such statistics in planning agricultural programs and appraising situations.

The regular reports on dairy and poultry products and on furs are in demand by marketing organizations, government departments, farmers, processors, and others concerned with the development and successful operation of these industries.

Cold Storage Statistics. — Information on the quantities of perishable food products held in cold

storage is in wide demand. Wholesale grocery firms, produce dealers, and brokers have a very direct interest in weekly and monthly statements of the amounts of dairy products, meats, fresh fruits, vegetables, poultry, and eggs which are available for distribution within Canada or for export. Data on storage holding of these commodities by provinces are provided by the Agriculture Division within a few days after the close of each month.

Food Balance Sheets. — Data on per capita food consumption in Canada are supplied annually to the Food and Agriculture Organization. These data are also used in studies undertaken by the Federal Department of Health and Welfare, various consumer organizations, and other groups interested in food statistics from both commercial and nutritional points of view.

Farm Income and Farm Prices Statistics. — Series on cash and net farm income in Canada are available back to 1926 and cash farm income estimates are now released quarterly. The index of prices received by farmers covers the period 1935 to date. Many industries serving farmers, e.g., farm machinery firms, binder twine, oil, and fertilizer companies, use these data to check sales performance and outlook against available purchasing power. A considerable demand exists for regional breakdowns of farm income data so that analyses of this sort may be carried still further. Some firms use farm income statistics together with other data in estimating farm machinery requirements as much as 18 months in advance.

Government departments are important users of farm income statistics. The Economics Division of the Federal Department of Agriculture uses these data in connection with studies relating to the position of agriculture in the general economy. The net farm income estimate is an important component of the Bureau's estimate of National Income. The Research Department of the Bank of Canada and the Research and Development Branch of the Department of Trade and Commerce are interested not only in current estimates but rely on the Agriculture Division to make forecasts of net farm income. The Trade Commissioner Service subscribes to many of the Division's publications and requests are frequently received from individual trade commissioners for additional information on specific commodities. The United States Government publishes Canadian farm income estimates in their farm income publication and the data are used for comparisons of the economic position of agriculture in Canada with that of other countries.

Number, Periodicity and Nature of Reports

Report	Number	Periodicity	Contents
Crops Section			
Crop Reporting Series	23	Seasonal	Includes 13 qualitative telegraphic reports covering the development of major field crops from seeding through harvest and 10 quantitative reports on stocks, seeding intentions, acreage, production, and value of principal Canadian field crops.
Grain Statistics Weekly	1	Weekly	Current statistics on commercial supplies, marketings, inspections, stocks, prices, transportation, and exports of Canadian grain.
Grain Milling Statistics	1	Monthly	Production of flour and other mill products, quantities ground, stocks on hand in mills, and monthly export data.
The Wheat Review	1	Monthly	A review of the world wheat situation with special emphasis on the supply position in each of the major exporting countries and the demand situation in importing countries. Canadian problems are given particular attention; changes in policy are reported as well as current and historical data on supplies, marketing, exports, prices, transportation, crop conditions, etc.
Coarse Grains Quarterly	1	Quarterly	A review of the coarse grains situation with detailed information on Canadian supplies, the demand situation, prices, trade, crop conditions, etc. Data on Canadian oilseeds, high protein feeds, and millfeeds are also included.
Grain Trade of Canada	1	Annual	A complete summary of the Canadian grain situation including current and historical tables on acreage, production, deliveries, inspections, stocks, internal movements, prices, dockage, exports, disposition, storage capacities, and freight rates. Flour milling statistics are also summarized in this publication.
Handbook of Agricultural Statistics, Part I—Field Crops	1	Every two or three years	A comprehensive handbook of major statistical series relative to field crops from 1908 to 1950. Tables are set up by provinces, regions, and for all Canada.
Fruit and Vegetable Crop Reports	8	Seasonal	A series of reports on crop conditions, outlook, production, and value of principal commercial crops of fruits and vegetables.
Honey	2	Seasonal	Numbers of beekeepers and colonies, production and value of honey crop.
Maple Products	1	Annual	Production and value of maple products.
Sugar Situation	1	Monthly	Stocks, manufactures, sales of raw cane sugar and refined beet, and cane sugar.
Fruit and Ornamental Nursery Stocks Sales	1	Annual	Quantity and wholesale value of sales by species, by provinces and for Canada as a whole.
Forage and Vegetable Seeds	2	Seasonal ¹	Seasonal estimates of production and value published in the Quarterly Bulletin of Agricultural Statistics.
Fibre Flax Production	1	Annual ¹	Published in Quarterly Bulletin of Agricultural Statistics.
Hops Production	2	Seasonal ¹	Seasonal estimates published in Quarterly Bulletin of Agricultural Statistics.
Tobacco Production	1	Annual	Production and value of tobacco by types.
Tobacco Statistics (Historical Series)	1	Every 2 or 3 years	Includes major historical series on production, processing, and trade in Canadian tobacco.
Food Balance Sheets	2	Seasonal ²	Special compilations covering in detail per capita supplies of food moving into consumption in Canada. Prepared on both calendar year and crop year basis. <i>Not released for general distribution.</i>
Live Stock Section			
Reports of Live Stock Survey:			
Swine	2	Semi-annual	Swine numbers by provinces and for all Canada.
Cattle, Horses, Sheep	2	Semi-annual	Cattle, horses, and sheep numbers by provinces and for all Canada.
Poultry	2	Semi-annual	Poultry numbers by provinces and for all Canada.
Fur Statistics	3	Seasonal	1. 'Anticipated pelt production of Fur Farms' provides a preliminary estimate of pelts to be available at marketing time. 2. 'Fur Production' sets out production of pelts by provinces with source, i.e., wildlife or ranch raised. 3. 'Fur Farms Report' includes number and value of fur farms and of fur animals, pelts sold, with breakdown by provinces and kinds, prices, exports and imports.

1. Not published as separate releases.

2. Limited distribution only. Included in part in other publications.

DOMINION BUREAU OF STATISTICS
AGRICULTURE DIVISION

Chart showing function
and organization

DOMINION BUREAU OF STATISTICS

AGRICULTURE DIVISION

Responsible for current intercensal estimates pertaining to agriculture. These include estimates of producing units on farms, production and value of farm commodities, output of food-processing plants, labour and wages, and secondary documentation of statistics on agricultural income, domestic disappearance of foods, and physical volume of agricultural production. The staff of the Division numbers 98.

Director, C.V. Parker, Chief of Agricultural Statistics

General Staff - 4
1 Statistician Grade 2
1 Principal Clerk
1 Stenographer Grade 3
1 Clerk Grade 3

CROPS SECTION

Estimates of acreage, yield, and production of field crops and special crops including fruits and vegetables. Monthly census of sugar refineries, flour mills, and oil crushers. Food balance sheets, per capita consumption of foods. Analytical reports (wheat, coarse grains, etc.). The staff of the Section numbers 29.

Chief, W.D. Porter, Statistician Grade 7

General Staff - 2
1 Statistician Grade 3
1 Stenographer Grade 3

LIVE STOCK SECTION

Semi-annual live stock and poultry estimates. Annual wool and meat statistics. Monthly statistics on eggs, milk, milk products, cold storage holdings of agricultural food products, etc. The staff of the Section numbers 11.

Chief, W.F. Ewert, Statistician Grade 6

General Staff - 1
1 Stenographer Grade 2B

RESEARCH AND COMPILATION SECTION

Research into methods of estimating agricultural statistics. Co-ordination of methods throughout the Division. Supervision of compilation of semi-annual crop and live stock surveys. Farm income, indexes of prices and production. The staff of the Section numbers 26.

Chief, A.D. Holmes, Statistician Grade 6

General Staff - 2
1 Clerk Grade 4
1 Typist Grade 2A

CROP REPORTING UNIT

Qualitative telegraphic reports covering the development of major field crops from seeding through harvest. Quantitative reports on stocks, seeding and value.

Staff - 7
Supervisor, Principal Clerk
1 Statistician Grade 1
4 Clerks Grade 3
1 Clerk Grade 2B

Mechanical Equipment:
1 adding machine

GRAINS UNIT

Weekly statistics on commercial supplies, marketings, inspections, stocks, prices, transportation, and exports. Monthly review of world wheat situation—supplies, marketings, exports, prices, crop conditions, demand in importing countries, etc. Quarterly review of coarse grains including oilseeds and milliceds. Annual summary of the grain trade.

Staff - 4
Supervisor, Clerk Grade 4
1 Clerk Grade 3
2 Clerks Grade 2B

Mechanical Equipment:
2 adding machines (one 17 column)
1 calculator

MILLING UNIT

Monthly statistics of flour and other mill products, quantities ground, stocks on hand, etc.

Staff - 3
Supervisor, Clerk Grade 4
1 Clerk Grade 2B
1 Clerk Grade 2A

Mechanical Equipment:
1 adding machine
1 calculator

SPECIAL CROPS UNIT

Statistics of production, value, stocks, etc., of fruit and vegetable crops, honey, maple products, sugar, forage and vegetable seeds, fibre flax, hops, tobacco, sales of fruit and ornamental nursery stock, etc. Monthly, seasonal, annual, and special reports.

Staff - 6
Supervisor, Statistician Grade 3
1 Clerk Grade 3
1 Clerk Grade 4
1 Clerk Grade 2B
2 Clerks Grade 2A
1 Typist Grade 2A

Mechanical Equipment:
1 comptometer
1 calculator

LIVE STOCK ESTIMATES UNIT

Live stock population, marketings, etc. Production, consumption, and stocks of meats. Wool, hides, and other animal products statistics. Semi-annual, seasonal, and annual reports.

Staff - 2
Supervisor, Statistician Grade 3
1 Clerk Grade 3

Mechanical Equipment:
1 comptometer
1 calculator

DAIRY UNIT

Monthly statistics of fluid milk production and utilization, dairy products manufactured, dairy products, and fluid milk sales. Annual summary reports of the dairy industry.

Staff - 12
Supervisor, Statistician Grade 2
1 Principal Clerk
1 Clerk Grade 4
3 Clerks Grade 3
3 Clerks Grade 2B
2 Clerks Grade 2A
1 Stenographer Grade 2A

Mechanical Equipment:
2 adding machines (one 17 column)
1 comptometer
2 calculators

POULTRY AND FURS UNIT

Monthly estimates of numbers of layers on farms, annual production of poultry and eggs, etc. Fur statistics—anticipating peli production of fur farms, fur production, wildlife or ranch raised. Fur farms—number and value of farms and of animals, pelts sold, etc. Annual reports.

Staff - 9
Supervisor, Statistician Grade 2
2 Clerks Grade 4
2 Clerks Grade 2B
3 Clerks Grade 2A
1 Stenographer Grade 1

Mechanical Equipment:
1 adding machine
2 calculators

COLD STORAGE UNIT

Monthly holdings of meats, dairy products, fruits and vegetables. Annual survey.

Staff - 6
Supervisor, Technical Officer Grade 2
2 Clerks Grade 3
1 Clerk Grade 2B
1 Clerk Grade 1
1 Typist Grade 2A

Mechanical Equipment:
1 adding machine

RESEARCH UNIT

Inquires into processing and estimating procedures for voluntary mail sample surveys, both current and historical. Co-ordination of research.

Staff - 4
Supervisor, Statistician Grade 2
2 Statisticians Grade 1
1 Clerk Grade 3
1 Clerk Grade 1

Mechanical Equipment:
1 adding machine
2 calculators

COMPILATION UNIT

Edits and compiles semi-annual surveys and live stock surveys, etc. Work pool for other units of the Division.

Staff - 25
Supervisor, Principal Clerk
1 Clerk Grade 4
6 Clerks Grade 3
5 Clerks Grade 2B
3 Clerks Grade 2A
3 Clerks Grade 1
1 Office Appliance Operator Grade 2B
4 Office Appliance Operator Grade 2A
1 Office Appliance Operator Grade 1

Mechanical Equipment:
3 adding machines (two 17 column)
6 comptometers
2 calculators

FARM FINANCE UNIT

Statistics of prices received and wages paid by farmers, indexes of farm prices and production, farm cash and net income, farm capital, etc.

Staff - 7
Supervisor, Statistician Grade 3
1 Statistician Grade 1
1 Clerk Grade 4
2 Clerks Grade 3
2 Clerks Grade 2A

Mechanical Equipment:
1 adding machine
2 calculators

Number, Periodicity and Nature of Reports – Concluded

Report	Number	Periodicity	Contents
Live Stock – concluded			
Wool Statistics	2	Seasonal	1. 'Shorn Wool Production' sets out number of sheep shorn, yield per fleece, and total production. 2. 'Wool Production and Supply' includes production of shorn and pulled wool, exports, imports, and domestic disappearance.
Output and Consumption of Meats	1	Annual	Estimates of production and consumption of meat in Canada including data on a per capita basis.
Dairy Factory Production	1	Monthly	Production of creamery butter, cheese, ice cream, and concentrated milk products.
The Dairy Review	1	Monthly	Butter and cheese position, milk production and utilization, farm income from dairying.
Fluid Milk Sales in Selected Markets	1	Monthly	Sales by economic regions and in leading urban markets with percentage changes.
Dairy Statistics	1	Annual	Estimates of total milk production, utilization in factories, fluid milk sales, and consumption on farms. Price and value data are also included.
Poultry Estimates	1	Monthly	Numbers of layers on farms, total eggs laid, net farm and other production, by provinces and for all Canada.
Production of Poultry and Eggs	1	Annual	Detailed annual statistics by provinces and for all Canada.
Stocks of Dairy and Poultry Products in Principal Cities – Advance Statement	1	Monthly	Holdings in nine major cities.
Stocks of Dairy and Poultry Products	1	Monthly	Stocks of creamery butter, cheese, concentrated milk products, eggs, and dressed poultry, on first day of each month.
Stocks of Meat and Lard	1	Monthly	Stocks in cold storage on first day of each month, by provinces.
Stocks of Fruits and Vegetables	1	Monthly	Stocks in cold and common storage on first day of each month.
Stocks of Food Commodities in Cold Storage and Other Warehouses	1	Annual	Includes summary tables and charts by months and by provinces.
Live Stock and Animal Products Statistics	1	Annual	Detailed coverage of livestock populations, marketings, meat stocks, wool, hides, and other animal products.
Research and Compilation Section			
Preliminary Estimate of Farm Cash Income	1	Annual	Issued in January – contains provisional estimates of income received from sale of farm products during previous year.
Farm Cash Income	1	Quarterly	Estimates of income received from the sale of farm products by provinces and main commodities, quarterly and annual totals.
Farm Net Income	1	Annual	Net income of farm operators from farming operations, by provinces.
Index Numbers of Prices of Agricultural Products	1	Monthly	Monthly averages for each province and for all Canada.
Farm Land Values	1	Annual	Average values of occupied farm lands including buildings, by provinces and for all Canada.
Farm Wage Rates	3	Seasonal	Average wage rates at middle of February, May, and August.
Index of Farm Production	1	Annual	Index numbers of the physical volume of agricultural production for each province and for all Canada.
Handbook of Agricultural Statistics, Part II – Farm Income	1	Every two or three years	Historical series (present edition covers 1926-1950) of cash income from the sale of farm products, income in kind, gross farm income, farm operating expenses, depreciation charges, supplementary payments, and net income.
General			
Quarterly Bulletin of Agricultural Statistics	1	Quarterly	Summaries of current and historical agricultural statistics gathered from all sections of the Division and published in permanent record form.

DOMINION BUREAU OF STATISTICS

CENSUS DIVISION

The first census of modern times was taken by the Colony of New France in 1666. It was based on a name-by-name enumeration and was part of a continuing series of which the 1951 Census now being completed is the latest. Every year ending in "1" from 1851 has seen a census of the Canadian people and the 10-year count was specified in the British North America Act as the basis for redistribution of parliamentary seats. The scope of the census was extended until by the end of the 19th century it included not only population and agriculture but vital statistics, manufactures, mining, etc. With the increase of statistical needs in Canada these latter subjects have been taken care of in other ways, but the 1951 Census did include distribution, fisheries, irrigation, and other topics which were conveniently handled in conjunction with the enumeration of population and agriculture.

The main function of the Census Division is organizing, taking, compiling, and analysing the Decennial Censuses of Population, Housing, and Agriculture of Canada and the Quinquennial Censuses of the Prairie Provinces.

The Division is also responsible for the work of searching census records (under certain regulations to safeguard the secrecy of documents) to establish the age of applicants (who cannot otherwise prove their age) for Old Age Security, Old Age Assistance, Blind, Veterans, and other pension schemes.

In order to accomplish these functions, the Division is divided into five Sections: Administration, Agriculture, Population, Mechanical Tabulation, and Social Analysis.

Administration

This Section is responsible for correspondence, staff records, and, through meetings with the Chiefs of other Sections, co-ordinates the work of the Division, allocates staff, and sees that a regular flow of work is maintained. It is also responsible for the searching of the early census records for verification of age for pension and other purposes. This Section is responsible for the proof reading of all manuscript of reports, bulletins, and volumes.

A Mapping Unit, directly responsible to the Director, keeps an up-to-date file of all available maps. Preparatory to a Census, it divides the Federal Electoral Districts of the country into enumeration subdistricts, writes descriptions of these by metes and bounds, and prepares maps of each subdistrict. This Unit keeps an up-to-date file of all municipal boundary changes so that census statistics may be published according to existing municipalities at the time of the census. At times, personnel of this Unit are responsible to the Population Chief for the

preparation of counts and tabulations of population for specified areas, e.g., population of the Electoral Districts, Census Subdivisions, and smaller geographical areas.

Agriculture Section

This Section is responsible for the various phases of the organization, compilation, analysis, and publication of the statistics gathered in the Census of Agriculture. In co-operation with the Agriculture Statistics Division, the Federal and Provincial Governments, and with agricultural associations, it prepares the several questionnaires and the plans of tabulation and publication. The Section is divided into several Units to look after the editing, coding, etc., of questionnaires, to check and compare tabulations from the several machine runs, and to prepare the various tables for bulletins and final volumes.

Population Section

This Section is responsible for the organization and compilation of the Census of Population. It includes three Units: General Population, Occupations and Employment, and Housing and Families.

- (a) The **General Population Unit** has the duty of organizing, compiling, and publishing the statistics of the Census of Population, exclusive of the statistics of Occupations and Employment, Housing and Families. The instructions to commissioners, field supervisors, enumerators, and those for editing, counting, checking, coding of the population documents, whether the work is performed in the field, in the regional offices, or in the central office, are the responsibility of this Unit. It also plans the various details of tabulation and the tables for the publication of bulletins and of final volumes.
- (b) The **Occupations and Employment Unit** is responsible for the preparation of the inquiries on occupations (Labour Force) and employment, the coding and compilation of these data, and the preparation of bulletins and volumes for the presentation of such statistics. This Unit maintains close liaison with other Divisions of the Bureau and other government departments, and co-operates with these agencies in the preparation of standard Occupation and Industry Code books.
- (c) The **Housing and Families Unit** is responsible for the Census of Housing as well as census statistics on Households and Families. It prepares specific instructions to the enumeration staff, and is responsible for the compilation of

the data from machine tabulations, and the preparation of the material for publication. Family statistics are prepared under the direction of this Unit from data on the population punch cards and published in the Housing and Family Volume.

Mechanical Tabulation Section

All the work of mechanical tabulation for the various censuses is centralized in this Section. Whether the work is carried out in the regional offices or in the central office, the direction comes from this Section. It is responsible for the effective planning of all runs and verifications of the census cards. It is equipped with the most up-to-date commercial machines for the punching of cards, sorting, and tabulation.

In addition, a pool of adding machines and comptometers is maintained for the adding of agricultural questionnaires, for the checking of machine tabulations, and for adding tables for all subject Sections of the Division.

Social Analysis Section

This Section is concerned with the analysis of the various statistics obtained from the census. It carries on research work into the quality of the census. It prepares and publishes monographs and special studies. In addition, it is concerned with the preparation of intercensal estimates of population by marital status and origin, and the analysis of available statistics on international migration. An annual report on The Control and Sale of Alcoholic Beverages is also prepared in this Section.

Recent Developments in Census Taking

The administrative aims in census taking are: (a) to obtain accurate and complete information; (b) to do this at the lowest possible cost; and (c) to issue results as early as possible.

Planning to accomplish these aims in the Ninth Decennial Census of Canada involved major innovations in both mechanical appliances and organization. The use of mark-sense documents in the field and of the electronic tabulator was the pivot of the mechanical changes; on the organizational side, the decentralization of processing to six regional centres constituted a fundamental departure.

Because of radical departures from previous procedures, it was decided not to place on a single Division of the Bureau the full weight of responsibility for organizing the 1951 Census. A Census Executive Committee was set up under the Chairmanship of the Dominion Statistician to plan the census and later oversee the actual work. Included in this Committee were the Assistant Dominion Statistician, the Administrative Officer, the Director of the Special Surveys Division, and the Senior Research Statistician, along with the Director and the Chiefs of the Census Division itself. Several meetings a week were held at crucial stages in the planning, such as

the October, 1949 trial census and the finalizing of schedules and instructions. Sub-committees were formed to take care of publicity, the illustrations and format of the Enumeration Manual, arrangements for hiring and paying enumerators and field supervisors, and other special tasks. The Executive Committee itself, however, dealt not only with general policy but with the detailed wording of the instructions to enumerators, the training guide, and all the other principal material of the census. Every detail of the main population document, for example, was discussed at the 14 sessions of the Committee devoted to this one matter.

The chain of authority which started with the Dominion Statistician and his Executive Committee proceeded through Regional Executive Committees to the commissioners, field supervisors, and enumerators.

Within the Executive Committee there was a division of labour among the members. For example, the Director of the Special Surveys Division arranged for, and reported on, the census work of the regional officers, while the chiefs of the censuses of agriculture and population reported on schedules, tabulation plans, etc., in those fields.

These changes necessitated research into tabulation, equipment, and methods; detailed planning of questionnaires, punch cards, work schedules, processing instructions, and flow charts; and the co-ordination of these operations between the various subject Units and the Mechanical Tabulation Section of the Census Division.

The Role of the Regional Offices

The Regional Statistics Offices which had been in existence for more than five years, and had gained much experience in the quarterly labour force survey as well as in other tasks, provided the nucleus around which to organize a decentralized census. Decentralization was necessary to avoid a concentration of staff in Ottawa but it also facilitated the taking of the census by having offices across Canada which could deal quickly with emergent problems.

Each regional statistics officer set up an executive committee with himself as chairman. His committee included two officers who were sent from Ottawa for a period of six to eight months. Because machine tabulation was to be an important part of the decentralized activity, arrangements were made to have a competent chief, in most of the regions a local man hired or borrowed for the period of the census, assisted by a member of the Dominion Bureau of Statistics from Ottawa. The sixth member of the local executive committee was the assistant regional statistics officer, a member of the regular local staff. This group was to direct the regional office processing, which would result in verified population and agriculture punch cards shipped to Ottawa for tabulation.

By this combining of local personnel, Ottawa staff experienced in the census, and experts in machine tabulation, each regional office was organized to meet any situation. Uniformity as among the several offices and the necessary conformity with the plans laid down by the central executive committee were maintained by (a) the use of a control manual, (b) constant telecommunication and (c) visits of senior staff from Ottawa.

Field Staff – Commissioners, Field Supervisors, and Enumerators

Personnel.—A commissioner was appointed for each electoral district and was responsible for taking the census in his district. The commissioner checked the maps and descriptions of his area to ensure no overlapping between enumeration subdistricts and that no part of his district was omitted. He secured office space, and halls in which to instruct enumerators. The commissioner was in full charge of publicity, and dealt with response difficulties and other problems of public relations as they arose. The quality of all work done in the district was the responsibility of the commissioner. Hitherto the commissioner selected and trained the enumerators as well as checked their work and accounts, but with an average of 70 enumerators he could not do full justice to this task. In 1951, each commissioner was given a number of field supervisors to assist in the District. The supervisor had an average of 20 enumerators to instruct, supervise during enumeration, and check their returns. The actual house to house canvass was completed by enumerators who were appointed upon their successful completion of a personnel selection test. In all, there were 261 commissioners, 834 field supervisors, and 18,000 enumerators.

Training.—In Canadian censuses prior to 1951, the book of instructions to enumerators was discussed by the Chief of the Census or his assistant with commissioners assembled in small groups, and the commissioners were expected to give three days of training to their enumerators. No details on the method of instruction, and no materials, aside from one or two practice interviews and specimen schedules, were provided. For 1951, intensive planning work resulted in a training manual containing a schedule of training to be carried out in four days of four hours each for enumerators in "non-farm" areas and of six hours each in "farm" areas. Training time was kept as short as possible, consistent with endeavouring to ensure that each enumerator had an adequate understanding of every part of his task.

The first stage of the training program, which was completed by the 14th of April, was the instruction as master trainers of 30 senior Dominion Bureau of Statistics personnel, drawn from the Census Division and other Divisions of the Bureau as well. The instructors were members of the Executive Committee and senior officers of the Census Division who had worked directly with the Committee in framing the census program. Any points which were

not firmly fixed in the minds of the 30 trainees were cleared up during the subsequent two-week period which was devoted to individual study and informal discussion.

The second stage was the setting up of 40 instruction centres across the country, located for minimum travel of the field supervisors and commissioners who were the trainees; in these, 60 classes in all were held, about half during the week ending May 5, and half during the week ending May 12. In addition to instructing the commissioners and field supervisors in methods of census taking, a portion of the training time was devoted to the proper use of the *Training Manual* when instructing enumerators.

On May 14, field supervisors throughout the country gave a screening test to candidates for enumerator named by the commissioner of their district. By May 17, the results of the test were available and the successful candidates were notified to report for training. The training period was May 21 to 24; since the census was taken as of June 1, this allowed one further week for the enumerator to study his material and acquaint himself with his enumeration area. Where enumerators dropped out, it was arranged to have special training sessions for substitute enumerators or else to have the subdistrict covered by some other enumerator after he had finished his initial assignment.

In the three stages of training, namely master trainers, commissioners and field supervisors, and enumerators, there appeared the possible danger that the instruction itself might suffer through a lack of uniformity or a general watering down of the instruction material. The Census Executive Committee attempted to forestall such a situation by preparing a very detailed and comprehensive training packet.

Enumeration and Training Manuals.—In previous censuses, a single set of instructions to enumerators and commissioners was printed, and each commissioner imparted its contents to his enumerators in whatever time and manner he saw fit. The 1951 *Training Manual* included a precise time table, carefully worked out and tested at head office during a period of two years prior to the census. Each minute of the sixteen hours for enumerators in "non-farm" areas and twenty-four hours for enumerators in "farm" areas was allocated to one or other of the numerous topics on which instruction was required.

The 1951 *Enumeration Manual* was divided into two parts: (A) the basic rules which were to be memorized, and covered only a few pages of the manual, but which were expected to cover 90 per cent of cases, and (B) more detailed definitions and requirements, to be referred to as required. A complete reference index was included in Part B.

Numerous illustrations were interspersed with the text to provide a measure of visual instruction.

The *Training Manual* did not give the instructor the actual words he should use, but merely the points to be covered. The instructors were trusted to use

local illustrations of key points. The manual was suitably interspersed with practice exercises for the trainees and questions which the trainer could use to keep them alert and interested. It contained also a practice narrative designed to simulate real interviews as nearly as possible. It reviewed the forms which the enumerators were required to handle in an order which would permit logical exposition and correspond as far as possible to the order in which the forms would be used. Enlarged copies of the documents were provided for instructional purposes and the enumerators were shown how to assemble and use the special "mark-sense" pens which had been manufactured for the census.

The instruction stressed, for example, the route the enumerators were to take, especially in rural areas, when the sampling of certain facts depended on this route.

Remuneration.—The compensation of commissioners was based on the number of persons, farms, etc., enumerated. In addition, they were paid for actual expenses rather than given a non-accountable special allowance as in previous censuses. Field supervisors were each paid \$600 and compensated for their expenses. Accountable advances were given both commissioners and field supervisors.

The enumerators were paid for the period of instruction, including expenses, immediately after the end of the instruction period. For actual enumeration they were paid on a schedule basis, although in sparsely settled areas remuneration was on a day basis. Allowances in lieu of expenses were paid in "rural" areas except where "per diem" rates prevailed, when actual expenses were paid.

In order to reduce the delay in paying accounts, arrangements were made with the regional treasury offices to issue cheques to the field personnel as soon as the accounts had been checked and passed by the regional census office. For Ontario and Quebec, the payments were made through the office of the Chief Treasury Officer of the Department of Trade and Commerce at Ottawa.

Accounts for rental of offices, halls, special means of transportation, and other miscellaneous matters were paid through the Cost Control Section of the Bureau.

Publicity

A comprehensive publicity program was planned and carried out. It informed the public on the nature and value of the census and prepared respondents for the visit of the enumerator. It aimed to achieve this goal chiefly through the public-spirited co-operation of the press, radio, motion pictures, business and other organizations and agencies.

A Census Publicity Committee was set up. It consisted of representatives of organizations embracing major segments of the publishing, entertainment, advertising, and business fields. Members of the Committee supplied helpful suggestions and

experienced counsel and enlisted the interest and support of their organizations.

Bulletins and press releases on different phases of the census were prepared for distribution. A one-minute newsreel clip was distributed to all theatres and a series of 30-second spot announcements was prepared for use in "public service" radio broadcasts, as well as a 15-minute census radio interview that could be used as the basis of different talks. Broadcasts on the census by the Minister of Trade and Commerce were carried by the two national networks on the eve of the census (May 31) and one by the Dominion Statistician on May 26.

Posters were displayed in all post offices and on bulletin boards in 41,000 plants. The latter poster emphasized the importance of exact description of a worker's job. Labour organizations co-operated in the aim sought, by urging workers to ascertain their exact job titles and to inform the person who would supply the information to the enumerator. Many house publications carried similar requests to the workers.

The "de jure" Definition and Transfer of Records of Temporary Residents

The constitutional purposes which the census serves require that the count be of persons "residing" rather than "physically present" in each locality. Thus, persons enumerated at summer cottages, for example, were included in the counts of the city in which they live during most of the year. In order to avoid any danger of under-enumeration of such persons, they were covered by the enumerator in whose territory their cottage was located and the details recorded on a mark-sense document identical with the regular one except that it showed the address of the usual residence rather than that of the cottage. The urban enumerator who found the house vacant noted this fact on his Visitation Record, which was designed as a control list showing every dwelling in his subdistrict. In the regional office a search was made in records of the subdistrict containing the city home address. If the city subdistrict did not contain the full enumeration of the persons, the cards were inserted and punched like ordinary documents. Because of the need for such transfers, no count for a municipality was complete and final until the entire country was enumerated and all temporary resident cards transferred. The period allowed for this transfer was four months from the start of enumeration.

Among the many details which were worked out in this feature of a "de jure" census was the transfer between regional offices of documents for persons whose usual residence and place of enumeration were in different regions. Special measures were taken for the enumeration of persons out of the country, including diplomatic staff, and armed forces. Finally, a general appeal was issued by press and radio to persons who believed that they had not been enumerated, requesting them to check with a census officer.

A device new in Canadian census taking was used for enumeration of transients. Hotels, missions, etc., were enumerated during a single evening, that of June 6. By the simultaneous enumeration of transients across the country, the danger of duplication or omission was minimized. Through the co-operation of hotel-keepers, every guest was requested to complete a form to show whether he had a usual place of residence elsewhere at which he would be enumerated and, if so, the address of this place. Persons who did not report any usual place of residence elsewhere, or who stated they would not likely be enumerated at their usual residence, were asked to complete a special individual census form. This was turned over to the enumerator who was available also to give instruction on how the form was to be completed.

New Machines

In the past, each enumerator wrote down the facts gathered on large sheets or forms, and these data were manually transferred to punch cards. Such a transfer required that the written words be coded to numbers, a slow and tedious process, and requiring the training of a large staff to code and, later, to key punch the cards.

For the 1951 Census, officials of the Bureau worked out with a manufacturer of business machines a process whereby information could be transferred to a punch card mechanically. The enumerator recorded the particulars on both sides of 7" x 7" mark-sense documents. The marks, made with a special pen using an ink which will carry an electric current, were placed in appropriate ovals on the card. The card is "read" by a machine known as a Document Punch, avoiding many of the human errors and much of the time and cost of hand key punching. The punch card thus produced provides the information on a person in a form which can be fed through subsequent machines which produce the final count of the census.

The Electronic Statistical Machine, also specially designed for this census, checks the entries for consistency. The machine can be set to make many different comparisons at one time and to reject cards which show an unacceptable combination of characteristics. For example, a card for a doctor must show a minimum number of years of schooling. The machine will also reject cards with double or missing punches and will examine cards at the rate of 450 per minute. This Electronic Statistical machine is also used to make final tabulations after the cards are edited. It will count 60 single facts, or combination of facts, in a single run. The machine not only stores up the counts of the various characteristics during a single run but distributes the cards into 12 pockets corresponding to characteristics, thereby saving the time of a separate sorting operation. When the cards of a group (subdistrict, municipality, county, etc.) are totalled by the machine, it will print through a set of type bars the 60 unit totals on sheets of paper with preprinted unit headings or stubs and turn up the paper, and position the machine carriages for the next set of counts.

An added feature which can be installed on the Electronic Statistical Machine is the summary punch card device. As the machine prints the 60 unit totals, the summary punch automatically punches a summary card with the same totals. These summary cards, showing subdistrict totals, for example, can be passed through the machine and the district totals obtained and printed on the tabulation sheets. This process eliminates a great deal of the clerical work formerly required to prepare work or summary tables.

By the addition of special relays, the counting capacity of this tabulator was increased so that it could count the total number of persons, the number of children, and other pertinent facts, as well as noting the age and other characteristics of the head of the family and the age of the wife. All these family characteristics were transferred mechanically to a family summary card. These were used in the tabulation of family statistics. In previous censuses these summary cards were produced by manual coding and punching.

Tabulation Program

In accordance with the requirements of speed and economy of the 1951 Census, a complete plan of tabulation was made at the same time as the documents were finalized.

Instructions and charts showing the flow of agriculture, population, housing, and occupations punch cards through the various tabulating machines were carefully planned to obtain as much essential data as possible, and machine capacity was fully utilized. No data were obtained on the assumption that they might be required.

As the punch cards were received in Ottawa from the regional offices, the number of cards in each group was checked against the total indicated on the group index card. The cards were then manually grouped in rural municipalities and other statistical areas for tabulation. The first-run tabulation produced data for the smallest geographical areas for which statistics are released. Later runs provided cross-classifications of the data by larger geographical areas. In some instances, a county would be the unit for cross-classification, in others the province.

A useful device applied throughout was to get final figures on the major item, such as birthplace, religion, etc., in one run in which lesser classes, because of limited counter capacity, were not counted but sorted into a pocket of the machine. It then sufficed to re-run these relatively small numbers to complete the distributions. The tabulation schemes varied somewhat with the subject matter.

Publication Program

The requirements of census publication of final results are two-fold: information in temporary format issued as tabulation progresses, and a permanent bound record issued after all tabulations are complete. These two purposes are being met in 1951 by a single typing and printing. The format of the

volumes is planned at the outset; suitable page and section numbers are assigned, and the several sections are typed and printed by a lithograph process immediately upon the tabulation of the required figures. The photocopy and negatives are stored until all sections of the Volume have been prepared for print.

A condensation of the tables customarily printed will be made; most of the tables corresponding to those appearing in two population volumes of the 1941 Census will appear in one volume showing all the cross-classifications of population characteristics. The first volume will contain the simple count with no cross-classification of the main population items. Housing and Family data will likewise be condensed into one volume. As in previous censuses, subsequent volumes of the series will deal with the labour force, with families and households, housing, agriculture, and merchandising. A summary volume, including a report on the methods used, will end the series. In the past, this last volume appeared seven or eight years after the census; for this census it is hoped to produce it by 1953.

In past censuses, the printed tables included citations from the book of instructions to enumerators as the main guidance through the printed columns. A text is to introduce each volume, explaining in non-technical fashion the definitions used and the qualifications that must be attached to the several counts, as well as some interpretation of results.

Sampling

Economy was secured by the use of sampling in several instances. Inquiries on farm expenditures, production, and disposal of dairy products are among the questions asked every fifth farm operator. All the housing inquiries applied only to every fifth dwelling.

Certain demands for information in the census seemed best met by a sample survey. In the summer of 1952 a sample was canvassed for details on mortgages and certain items of farm machinery, expense, etc. These data are being edited and will shortly be summarized for publication.

A sample check was applied for completeness and quality of enumeration. The 40,000 households in the labour force survey were matched household by household against the census enumeration. This matching indicated relative completeness and quality; persons enumerated in the labour force survey and not in the census will be counted and a tally made of differences between the two sets of records. Matching alone cannot give the absolute error of either one of the surveys being compared. This could be secured only by a third call on households showing discrepancies. Twelve specially trained enumerators investigated about 1,000 cases of discrepancy in order to ascertain which was the true state of affairs. Because of convenience to the regional offices, this re-enumeration was confined to Montreal and Toronto.

Time Schedule

In order to be able to schedule staff and machine requirements, it was necessary to establish a time table for all processing operations.

Two Trial Censuses were conducted in March and October, 1949. These furnished valuable information on such items as training methods, decentralized processing, the quality of mark-sense enumeration, the use of field supervisors, and some machine processing rates. Using these data, a time schedule for the complete census was set up.

This time table was conditioned by the time table for enumeration and, in order to know the progress of enumeration, each enumerator reported semi-weekly the number of persons enumerated. These reports were successively summarized by the field supervisors and regional officers. As they passed through his hands the field supervisor could see which of his enumerators was lagging and where his energies could best be directed. The regional officers in turn stimulated those field supervisors whose work was not meeting the standards. Partly because of this follow-up system, 70 per cent of the enumeration was completed within a month of the census date, and 97 per cent within two months.

Time table dates were set at which the releases of tabulated material were to be made. Preliminary population totals for Canada were issued during the five months after the census date. Final figures showing various population characteristics without cross-classification were released by March, 1952. Final agriculture data on farm numbers and areas, crop areas, farms by size and tenure, livestock population, and machinery were released by June, 1952. A summary of specified housing characteristics was also released by that date.

Appraisal of Quality and Program for Improvement

No census planning, however detailed, can anticipate every point which arises, and the 1951 Census with its many innovations is no exception. The mark-sense pens did not live up to advance tests. An excessive flow of ink through the nib and some leakage resulted in a temporary shortage of ink shortly after enumeration started.

The excessive flow of ink delayed its drying and frequently resulted in ink marks being made on the card where none should appear and resulted in many rejects when the punched cards were later edited.

While a supply of electrographic pencils eased the situation for enumerators, it delayed somewhat the work of the document punch through partial failure of the machine to read non-conductive marks. A number of documents had to be re-marked.

Bad weather in the Prairie Provinces resulted in some serious transportation problems, and enumeration in some areas was prolonged. This gave rise to dissatisfaction with the rates of remuneration.

Despite these and a number of other lesser contingencies which arose, the census operation is, in general, still within the limits originally planned of personnel, space, time, and expenditure.

While the quality check mentioned earlier is for the purpose of appraisal of enumeration and quality, a conference of all officers who worked in the census was held in April, 1952. It permitted a thorough analysis to be made of all the problems which arose in the taking and processing of the census. Based on these findings, a program of study and research will make it possible to further improve methods of census taking.

Uses of Census Data

The legal reason for the decennial census is to determine representation in Parliament. In addition, census data are widely used by all levels of government, by business and industry, research workers, educationists, social workers, and many others. The many uses of census data cannot be set down in a short statement but a few examples are given below.

The census count is of special interest to those provinces that have signed tax agreements with the Federal Government since the compensation formula involves their population as counted in the census.

Government planning at all levels requires factual data on the number and characteristics of the population, agriculture and other industries, housing, and so on. Towns and cities are interested in the measure of their growth it provides. For cities, it measures how much of the growth has been in the older central portions and how much in the fringe areas which are rapidly increasing in importance. The count of the farm population is significant because the needs, tastes, and interests of farm people are different from those of people living in cities and towns. Such differences are important not only to the people themselves but to the business that serve them by producing or selling clothing, furniture, etc. Census data are used for such varied purposes as planning the location of retail businesses, laying out of sales territories, transportation lines, school areas, and so on.

Without the count of population, it would be impossible to calculate birth and death rates for making comparisons between Canada and other countries or between one province and another. These rates are used to measure the gains from past public health progress and to show what future work remains to be done. Similar uses of the census are for aid in interpreting figures of sickness, of crop production, and of the national consumption of a variety of goods ranging from automobiles to milk.

The detailed information on age, sex, and marital status of the population has many uses. Industry has found by experience that its sales of various kinds of goods are closely related to the number of people in particular age and sex groups. The market for certain types of women's clothing is an obvious example; other products are magazines with specialized appeal, baby carriages, wheel chairs, and toys. The prospective cost of old age pensions, family allowances, health insurance schemes, etc., are estimated from the census. Town planners make use of such information in the attempt to find out what sort of accommodation is likely to be in demand in

the future for areas with which they are concerned. Facts regarding age distribution by localities are used to estimate the amount of school accommodation, the number of teachers, etc., that will be needed. Such facts are also used to plan for hospital accommodation, to find out the potential number of blood donors, etc.

Anyone dealing with aspects of a possible military emergency will find census figures a main source of knowledge. The way in which the country is divided into communities, the ages, family patterns, occupational skills, etc., of these communities will be valuable in local defence planning.

The census information on language spoken is of interest to all concerned with public communication—not the least, newspaper publishers and advertisers. Data on mother tongue, birthplace, and citizenship provide invaluable material for the study of assimilation of immigrant peoples.

The census provides a detailed record of Canada's manpower and its skills. It tells the labour force status of every individual 14 years of age and over—how many Canadians are working; how many are seeking work; how many have jobs but are not working at them for various reasons; how many are unable to work. It tells how many Canadians work on farms, in textile mills, automobile plants, building companies, retail stores, etc., and gives detailed information on the occupations of Canada's workers. Such data have a multitude of uses. For instance, personnel officers in industry whose job is to recruit for various kinds of work need to know how many people there are skilled in those kinds of work. On the other hand, those choosing a career need to know the kinds of occupations which are being followed and some indication of the earnings levels and regularity of employment in each. Vocational guidance counsellors can do their most useful work when they are supported by a knowledge of the various occupations, the numbers engaged in them in different parts of the country, their ages and other characteristics. The work of trade unions and any study of the trend of their activities must make use of the census data on numbers of those engaged in the relevant occupations, without which the trend in numbers unionized is not significant. The census will also tell about steadiness of employment; what the average weeks worked during the year are for plumbers, say, as against accountants.

The earnings information is used to divide the country into sales territories based on purchasing power for goods as diverse as aluminum kitchen ware and chocolate bars. Manufacturers of wallpaper and other kinds of merchandise have used census figures on distribution of earnings to determine the grade of product which would suit the market in different parts of the country.

The census counts of the number of veterans, the number married and how many children they have, the number in each occupation and the amount of their earnings will enable government administrative departments to make calculations of future liabilities with respect to the various benefits and privileges extended to veterans.

DOMINION BUREAU OF STATISTICS
CENSUS DIVISION

Chart showing function
and organization

DOMINION BUREAU OF STATISTICS

CENSUS DIVISION

Responsible for organizing, taking, compiling, and publishing the results of the censuses of Population, Housing, and Agriculture; for searching census records in order to verify the age of applicants for pension purposes. The staff of the Division numbers 149 (For temporary staff for the 1951 Census see chart entitled "Distribution of Temporary Staff and Mechanical Equipment for the 1951 Census").

Director, O. A. Lemieux, Chief of Demography
Assistant Director, J. L. Forsyth, Statistician Grade 6

General Staff — 76

- 1 Technical Officer Grade 3
- 2 Principal Clerks
- 5 Clerks Grade 4
- 2 Clerks Grade 3
- 47 Clerks Grade 2B
- 7 Clerks Grade 2A
- 1 Stepographer Grade 3
- 4 Stenographers Grade 2B
- 4 Typists Grade 2A
- 2 Stenographers Grade 1
- 1 Typist Grade 1

AGRICULTURE SECTION

Planning Agriculture questionnaires, field and office processing instructions, tabulation program, editing and compiling for publication the following data: Number, area, and tenure of occupied farms; age and residence of farm operators, and farm workers; area and production of crops; live stock population and disposal; animal and forest production; farm revenues and expenditures; farm machinery. The staff of the Section numbers 20.

Chief, J. L. Forsyth, Statistician Grade 6

- 1 Statistician Grade 3
- 1 Statistician Grade 1
- 4 Clerks Grade 4
- 5 Clerks Grade 3
- 8 Clerks Grade 2B

POPULATION SECTION

Census of population and housing, including occupations and employment; planning of questionnaires; preparing instructions for field and office processing, including tabulation; compilation and preparation of tables and text for bulletins and volumes. The staff of the Section numbers 34.

Chief, D. L. Ralston, Statistician Grade 6

MECHANICAL TABULATION SECTION

Plans punch cards and tabulation programs; punches, edits, sorts, and tabulates agriculture, population, housing, family, and labour force punch cards; operates a pool of adding machines and comptometers for adding agriculture data, checking machine tabulations and summary tables. The staff of the Section numbers 6.

Supervisor, Technical Officer
 Grade 3
 1 Senior Supervisor
 1 Technical Officer Grade 1
 3 Clerks Grade 2B

Mechanical Equipment:

- 12 101 Electronic Statistical Machines (Veeder)
- 1 999 Document Punch
- 1 xxx Numbering Punch
- 20 524 Summary Punches
- 9 513 Reproducers
- 1 552 Interpreter
- 7 080 Sorters (Veeder)
- 16 016 Duplicating Punches
- 8 405 Tabulators
- 3 602A Calculating Punches
- 9 801 Bank Proof Machines
- 2 075 Sorter Counters
- 13 052 Verifiers
- 12 077 Collators
- 25 Comptometers
- 2 Calculators (Frieden)

SOCIAL ANALYSIS SECTION

Annual estimates of population by sex, marital status, origin; annual estimates of households and families; analysis of census data; responsible for preparation of census summary volume and monographs; preparation of special reports on immigration and emigration; annual report on control and sale of alcoholic beverages. The staff of the Section numbers 12.

Chief, A. H. LeNeveu, Statistician Grade 5

- 1 Technical Officer Grade 3
- 1 Statistician Grade 2
- 2 Statisticians Grade 1
- 1 Clerk Grade 4
- 2 Clerks Grade 3
- 2 Clerks Grade 2B
- 1 Clerk Grade 2A
- 1 Stenographer Grade 3

GENERAL POPULATION UNIT

Population counts by geographical areas; rural and urban distribution. Statistics on age, sex, marital status, years of schooling, religion, birthplace, period of immigration, citizenship, official language, and origin of the people.

Staff — 14

- Supervisor, Statistician Grade 2
- 1 Statistician Grade 2
- 1 Principal Clerk
- 3 Clerks Grade 3
- 7 Clerks Grade 2B
- 1 Clerk Grade 2A

HOUSING AND FAMILY UNIT

Statistics on type, size, tenure, rent, living facilities, conveniences, and crowding, etc., of dwellings and households; family size and composition by age, sex, origin, years of schooling, occupations and earnings of family heads.

Staff — 9

- Supervisor, Technical Officer Grade 3
- 2 Statisticians Grade 2
- 1 Clerk Grade 4
- 2 Clerks Grade 3
- 3 Clerks Grade 2B

OCCUPATIONS AND EMPLOYMENT UNIT (LABOUR FORCE)

Labour force statistics of persons 14 years of age and over showing occupation and industry classifications of persons in labour force by age, sex, marital status, years of schooling, etc. Earnings and employment statistics of wage earners showing occupation and industry by sex, age, marital status, etc.

Staff — 10

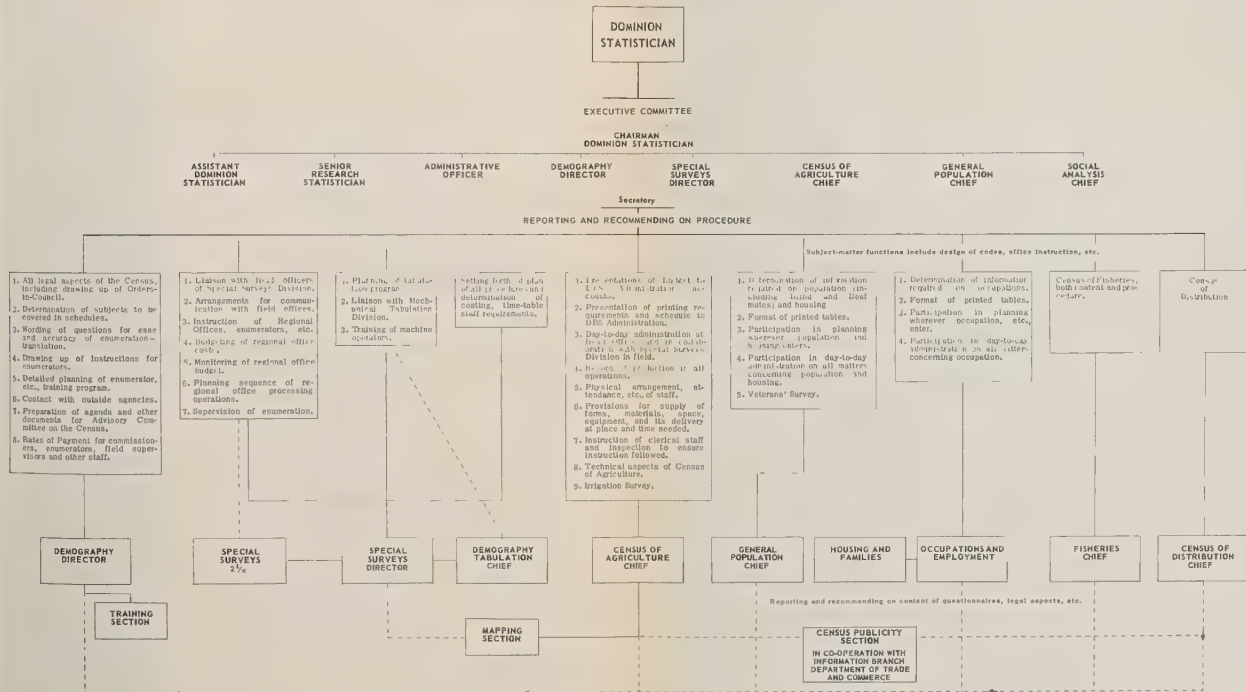
- Supervisor, Statistician Grade 4
- 2 Statisticians Grade 2
- 1 Clerk Grade 4
- 2 Clerks Grade 3
- 4 Clerks Grade 2B

DOMINION BUREAU OF STATISTICS

Chart showing

ALLOCATION OF D B S FUNCTIONS
IN TAKING THE
1951 CENSUS

ALLOCATION OF DBS FUNCTIONS IN TAKING THE 1951 CENSUS



DOMINION BUREAU OF STATISTICS

Chart showing
DISTRIBUTION OF TEMPORARY STAFF
AND
MECHANICAL EQUIPMENT
FOR THE
1951 CENSUS

DOMINION BUREAU OF STATISTICS

CENSUS DIVISION

DISTRIBUTION OF TEMPORARY STAFF AND MECHANICAL
EQUIPMENT FOR THE 1951 CENSUS¹

REGIONAL CENSUS OFFICES

Responsible for making physical arrangements for office space and staff; supervising field staff during enumeration; editing and processing to punch card stage the agriculture², housing and population questionnaires; checking and processing accounts; micro-filming population documents.

OTTAWA

Editing and punching data on agriculture questionnaires, tabulating data on agriculture, housing, and population punch cards; checking tabulations and preparing data for publication.

Staff³ — 338 (437)

4 Census Senior Supervisors
11 Census Supervisors
169 Census Clerks
142 Census Machine Operators
7 Census Messengers
1 Census Stenographer
4 Census Typists

Mechanical Equipment:

Units	Type	Description
12	101	Electronic Statistical machines
1	999	Document punch
1	xxx	Numbering punch
9	513	Reproducer
1	552	Interpreter
7	080	Sorter (Veeder)
16	016	Duplicating punch
20	524	Summary punches
8	485	Tabulators
3	602A	Calculating punch
9	801	Bank proof machine
2	075	Sorter Counter
13	052	Verifier (Agric.)
2	077	Collator

Halifax

Staff³ — 142 (148)

2 Census Senior Supervisors
10 Census Supervisors
114 Census Clerks
11 Census Machine Operators
3 Census Messengers
1 Census Stenographer
1 Census Typist

Mechanical Equipment:

Units	Type	Description
1	101	Electronic Statistical machines ⁴
2	999	Document punch
2	xxx	Numbering punch
1	513	Reproducer
1	552	Interpreter
1	080	Sorter (Veeder)
1	016	Duplicating punch

Montreal

Staff³ — 432 (444)

4 Census Senior Supervisors
26 Census Supervisors
369 Census Clerks
83 Census Machine Operators
8 Census Messengers
1 Census Stenographer
1 Census Typist

Mechanical Equipment:

Units	Type	Description
2	101	Electronic Statistical machines ⁴
5	999	Document punch
3	xxx	Numbering punch
1	513	Reproducer
1	552	Interpreter
2	080	Sorter (Veeder)
12	016	Duplicating punch ⁴
1	602A	Calculating punch
6	801	Bank proof machine
10	052	Verifier
1	077	Collator

St. John's

Staff³ — 13 (3)

1 Census Supervisor
12 Census Clerks

Toronto

Staff³ — 359 (353)

3 Census Senior Supervisors
20 Census Supervisors
304 Census Clerks
24 Census Machine Operators
6 Census Messengers
1 Census Stenographer
1 Census Typist

Mechanical Equipment:

Units	Type	Description
2	101	Electronic Statistical machines ⁴
5	999	Document punch
3	xxx	Numbering punch
1	513	Reproducer
1	552	Interpreter
2	080	Sorter (Veeder)
1	016	Duplicating punch

Vancouver

Staff³ — 127 (131)

2 Census Senior Supervisors
10 Census Supervisors
98 Census Clerks
12 Census Machine Operators
3 Census Messengers
1 Census Stenographer
1 Census Typist

Mechanical Equipment:

Units	Type	Description
1	101	Electronic Statistical machines ⁴
2	999	Document punch
1	xxx	Numbering punch
1	513	Reproducer
1	552	Interpreter
1	080	Sorter (Veeder)
1	016	Duplicating punch

Winnipeg

Staff³ — 411 (468)

2 Census Senior Supervisors
24 Census Supervisors
280 Census Clerks
94 Census Machine Operators
8 Census Messengers
2 Census Stenographers
1 Census Typist

Mechanical Equipment:

Units	Type	Description
2	101	Electronic Statistical machines ⁴
3	999	Document punch
3	xxx	Numbering punch
1	513	Reproducer
1	552	Interpreter
2	080	Sorter (Veeder)
20	016	Duplicating punch
2	602A	Calculating punch
10	801	Bank proof machine
17	052	Verifier
1	077	Collator

1. Exclusive of 261 commissioners, 834 field supervisors, and 18,000 enumerators.

2. In Montreal and Winnipeg offices only.

3. Maximum staff employed and (in brackets) estimated staff requirements.

4. Transferred to Ottawa on completion of field processing.

Number, Periodicity and Nature of Reports

Report	Number	Periodicity	Contents
1951 CENSUS:			
Population (Volume I) Characteristics by divisions and subdivisions	1	Decennial	Sex, age, marital status, origin, religion, birthplace, period of immigration, citizenship, mother tongue, official language, school attendance, and years of schooling.
Population (Volume II) Cross-classifications of population characteristics	1	Decennial	Characteristics such as marital status, origin, religion, birthplace, period of immigration, citizenship, official language, mother tongue, and years of schooling cross-classified by (a) age and sex and (b) origin and sex, characteristics of the immigrant population by period of immigration to show birthplace, citizenship, official language, and mother tongue, results of the census of blind and deaf persons.
Housing and Families (Volume III)	1	Decennial	Statistics relating to households and occupied dwellings, such as type of dwelling, number of rooms, tenure, rent, and household facilities. Family characteristics such as type and size of family, number and ages of children in relation to age, sex, marital status, origin, earnings, and schooling of the family head.
Labour Force (Volume IV)	1	Decennial	Labour Force statistics showing (a) occupations and (b) industries classified by age, sex, marital status, class of worker, birthplace, period of immigration, origin, and labour force activity.
Wage Earners (Volume V)	1	Decennial	Statistics for wage-earners showing occupations and industries classified by age, sex, earnings, weeks of employment, and hours of work.
Agriculture (Volume VI)	1	Decennial	Number, area, value, tenure and size of occupied farms, area and production of crops, livestock population, forest and animal products, farm machinery, farm revenue and expenditures. (Part 1. Canada Summary and data for 5 eastern provinces. Part 2. Data for Ontario and 4 western provinces).
Distribution (Volume VII) Retail Merchandise Trade	1	Decennial	Number of stores and value of sales classified by kinds of business. Employment, payrolls, accounts receivable and a breakdown between cash sales and credit are also shown as well as commodity sales by classes and kinds of business and data relating to retail chains.
Distribution (Volume VIII) Wholesale Trade, Retail Services, Hotels, and Finance Companies	1	Decennial	Data similar to that in Volume VII for retail trade is included in this volume for wholesale establishments with the emphasis on type of operation; commodity data are limited. Information on retail services is given by kinds of business with no commodity information. Special tabulations deal with hotels and finance companies.
General Review and Summary (Volume IX)	1	Decennial	General descriptive review of the 1951 Census of Population, Housing and Families, Agriculture, and Census of Distribution; Historical Summary and analytical tables with textual information covering same; Administrative report of the Dominion Statistician.

Prior to the publication of the Census Volumes, Special Compilations and preprints of specified tables of the six volumes were published. These showed, in advance, final population, housing, and agriculture data as they became available. The number of publications will approximate 25.

DOMINION BUREAU OF STATISTICS

EDUCATION DIVISION

Provincial Governments exercise almost complete jurisdiction in education, and provincial Departments operate school systems, and collect statistics of various kinds for guidance in administration. The primary function of the Education Division of the Dominion Bureau of Statistics is to co-ordinate provincial statistics of education and to supplement them where necessary for the attainment of comparable nation-wide statistics of education. This involves close collaboration with the provincial Departments of Education and direct inquiry in the case of some educational institutions.

Under the British North America Act of 1867, the right to legislate on matters respecting education was exclusively reserved to the provincial legislatures, subject to the maintenance of the rights and privileges of the denominational and separate schools existing at the time of union or admission as provinces. The Federal Government, however, assumed responsibility for the education of the Indian population, the population in territories outside the provinces, and inmates of penitentiaries. Thus, Canada has ten systems of publicly-controlled schools (or eleven if Quebec is counted as having two—the French-language Roman Catholic and the English-language Protestant), which are diverse in organization and content. In higher education there are provincial and independent universities, and provincial, independent, and affiliated colleges, all of which may receive provincial subsidies and federal grants. Teacher training is conducted in teacher training colleges or normal schools and in faculties or colleges of education within the universities.

The early provincial statistics of education comprised little more than a count of the number of schools in operation, partial records of pupil enrolment, and some figures on government expenditures. The decennial censuses collected nation-wide data on illiteracy and school attendance.

The Statistical Commission of 1912 recommended that provincial education statistics "accompanied by such explanation as is necessary to elucidate the figures" should be compiled into Dominion totals. In the next few years, teachers' conventions in several of the provinces passed resolutions recommending the creation of a central bureau for the collection and publication of education statistics. A section on education was added to *The Canada Year Book* of 1914. It consisted of a summary of the census statistics on illiteracy and school attendance, a description, by provinces, of the salient features of the existing Canadian systems of education, and a presentation

in tabular form of the principal annual education statistics, by provinces, from the beginning of the present century.

The Statistics Act of 1918 listed education as a subject of statistical study. In 1919, the Education Statistics Branch, the forerunner of the present Education Division, was set up in the Dominion Bureau of Statistics. Its early work consisted chiefly of preparation for the first Dominion-Provincial Conference on Education which was held in October, 1920. The Conference recommended that the provinces continue to collect their own statistics but that they provide the Bureau with annual statements showing teachers' certificates, types of schools, etc. The Bureau agreed to undertake the compilation of these statistics and, in addition, statistics on primary and secondary private schools and institutions of higher education. This set the general pattern for the work of the Bureau in the field of education statistics. With the co-operation of the provincial authorities it has since added to the data collected, assisted some of the provinces in the compilation of data, broadened the types of institutions covered, and worked toward obtaining greater comparability and uniformity in reporting.

The first statistical report of the Education Statistics Branch was issued in 1921 under the title *Historical Statistical Survey of Education in Canada*. In the years following, annual, and, later, biennial statistical reports on education have been issued and various research projects undertaken.

In 1936, the chief of the Education Division met with representatives of the Departments of Education convened in Regina for the biennial convention of the Canadian Education Association. Progress to date was surveyed and revised forms for the collection of data considered.

In 1939, the Canadian Education Association, through the Canadian Council of Educational Research, provided two grants totalling \$1,000 from Carnegie funds for a continuation of the studies of statistical records for pupil and teacher accounting and school finance. Drafts of these reports formed the basis of a Dominion-Provincial Conference on Education Statistics held in Ottawa in 1942. Owing to the magnitude of the task, continuing committees were formed to prepare the manuscripts for publication. The manuals were issued in 1944 and 1945 and have influenced subsequent changes in pupil and financial accounting.

The latest Dominion-Provincial Conference on Education Statistics was held in Ottawa in May,

1952. Representatives from the ten provinces, the Canadian Education Association, and the Canadian Teachers' Federation attended. Emphasis was placed on the adoption of uniform forms which lend themselves to mechanical tabulation; to streamlining procedures and forms and eliminating duplication; and provision for all essential data including the collection and processing of data on teachers' certificates, qualifications, and salary, so that the information would be available during the current school year.

While there are differences as among the provinces, the provincial Departments of Education generally collect fairly complete statistics for the public and separate elementary and secondary schools; usually a minimum from the normal schools, and in a few provinces some from the provincial universities or colleges. Most, but not all the special schools for the deaf and blind are provincially-operated. Vocational education may be all or in part under the Departments of Education, or some other departments, but may be independent. In addition, there are a number of special trade schools, some of which, such as the agriculture and home economics, mining, art, etc., are provincial, some private. In addition, there are the private elementary and secondary schools, private colleges and universities, and private correspondence trade schools which, in most cases, do not provide any statistical information to the provinces.

Information on universities and colleges is collected directly by the Division as few of the Departments of Education collect such data even where there is a provincial institution. The forms are designed to collect standard statistics but can be adapted to changing needs.

Similarly, data on libraries are collected directly from the individual libraries on forms designed in consultation with the Canadian Library Association.

The decennial censuses of Canada and the quinquennial censuses of the Western Provinces have always included questions on the educational status of the population, and the Education Division has made considerable use of the information obtained. Monographs based essentially on this and relevant data have been *Illiteracy and School Attendance*, *Dependency of Youth*, *Supply and Demand in the Professions*, and *Census Occupational Data for Counsellors*.

Plans call for a gradual extension of the scope of statistics included by the Division in its reports. Coverage can be expanded in two ways, in the number and types of institutions surveyed, and in the completeness of the picture provided for these institutions. The Division is also endeavouring to provide current statistics wherever possible. Preliminary bulletins giving current data for elementary and secondary, and for higher education institutions are published and it is hoped, beginning 1953, to provide current data

on teachers' salaries. Plans for extending the field to cover special provincial and other institutions not already covered, or to supplement the data available at present, were formulated at the 1952 Dominion-Provincial Conference on Education Statistics.

The Education Division is divided into three Sections: Elementary and Secondary Education Section, responsible for statistics relating to publicly-controlled (including separate) schools, and private elementary schools and business colleges; Higher Education and Libraries Section, responsible for statistics relating to universities, colleges, professional schools, and libraries; and Adult Education and Research Section.

Elementary and Secondary Education Section

The work of this Section covers the tax-supported schools whether classed as public or separate, private academic schools and business colleges, Indian schools, teacher training schools, and such special schools and classes as those for the blind and deaf, mentally defective, handicapped children, and industrial training schools (reform schools). In addition to statistics on institutions, teachers, pupils, and finance for these institutions, a directory of education organizations, an annotated bibliography of Canadian studies on education, and an index of articles in Canadian education periodicals are compiled.

Collection of Data

Certain of the information for all the provinces, and all the data for two of the provinces, are obtained from the official annual reports of the Departments of Education. Information on teachers, enrolment, etc., for seven provinces is obtained directly from the reports of classroom teachers or school principals on forms sent out by the Departments of Education. In some cases these forms are processed by the Departments before being forwarded to the Bureau; in others they are sent direct to the Bureau where the data are compiled and reported to the provinces.

Financial information is obtained as follows: Data on school revenue and expenditure are obtained from the reports of the provincial Departments of Education for six of the provinces, and from the reports of the school boards for two provinces. Public accounts are used to round out the picture in all cases.

Private schools and business colleges, as a rule, report directly to the Education Division. In two provinces, however, the Departments of Education collect the information for their own use and that of the Bureau on forms provided by the Bureau. Quebec has always collected this information for its own use.

Information on Indian schools and schools of the Northwest Territories is obtained from reports of the Department of Citizenship and Immigration and the Department of Resources and Development, respectively. Information on special schools and classes and on teacher training is obtained from the annual reports of the Departments of Education or by direct communication with the schools concerned.

Articles listed in the periodical index are selected from Canadian education magazines regularly received by the Bureau, from associations of teachers, trustees, home and school associations, etc. The list of studies on Canadian education is based largely on lists obtained from the education faculties of the universities.

Methods of Obtaining the Co-operation of Respondents

The co-operative working agreements between the Education Division and the provincial Departments of Education have proved mutually beneficial. These have been worked out through conferences, inter-departmental visits to work out common problems, and correspondence. All are attacking the same problems and all the provinces find the statistics published by the Bureau useful.

Members of the Division attend conferences of the Canadian Education Association, the Canadian Teachers' Federation, the Canadian School Trustees' Association, the Canadian Federation of of Home and School, the Canadian Association for Adult Education, and other education organizations whenever possible and maintain close liaison with the officers of those organizations.

Private schools and business colleges are provided with summarized information which they find useful.

Methods of Follow-up, Editing, and Compilation

The Departments of Education accept responsibility for providing the information required for the publicly-controlled schools. In the case of privately-controlled schools, the names of the few who do not respond are sent to the Regional Officers of the Bureau who visit the schools concerned.

All reports are carefully edited and checked. Most of the compilations are done by hand although hand-operated punch card machines have been used for age-grade compilations. Plans call for changing over to forms lending themselves to peg board or punch card tabulation in all cases where numbers to be processed warrant it. After being edited these will be processed by the Mechanical Tabulation Division.

Integration with Work of Other Bureau Divisions and Other Government Departments

The Division prepares an estimate of salaries and wages in education for the Research and Development Division for use in the National

Accounts. A chapter on education is written for *The Canada Year Book*. Data are prepared for the Departments of External Affairs and Trade and Commerce for overseas distribution or in response to requests from foreign countries. Figures on the educational level of the young people coming of working age are provided for the Department of Labour and the Department of National Defence.

As already explained, much of the work of the Division is based on close collaboration with the provincial departments concerned with education.

Statistical Gaps, Appraisal of Quality, and Program for Improvement

Considerable progress in presenting a statistical picture of elementary and secondary education in Canada has been made during the last three decades but it is still by no means complete. Problems requiring solution in teacher and pupil accounting were explored in the recent Dominion-Provincial Conference on Education and it is expected that progress will be made in solving a number of these. One of the problems considered was that of obtaining reliable information on high school graduation. A second was an accurate accounting of pupil withdrawals. Several provinces collect data on pupil destination. Supply and demand in the teaching profession was considered, and better data on enrolment in teacher training colleges and teacher certification should result.

An attempt will be made to get more reliable figures on the number of administrative units in the provinces according to type, the number of schools in operation, and the number of classes.

Uses of Education Statistics

Statistics of education are used by the three levels of government — federal, provincial, and municipal; associations of parents, teachers, and trustees; business and industrial firms; and by research students and writers.

Federal Government departments use such education statistics as examination results, pupil withdrawals, and destinations in making estimates on the labour force. The Department of National Defence is particularly interested in the number of boys graduating or withdrawing at the high school and college level as a source of supply of officer recruits. Their education level assists in determining training requirements. The Departments of National Health and Welfare, Labour, Agriculture, Fisheries, etc., are interested in information on the number of pupils receiving technical and professional education, the number and educational level of pupils leaving school, and so on.

To function effectively, all provincial Departments of Education utilize factual information. They appraise and revise their policies in the

light of statistical data, and often benefit from an evaluation of expedients attempted in other provinces. Among the problems which require factual information for solution are: provision for an adequate supply of teachers, appraisal of the status of teachers including their academic and professional qualifications, and annual losses to the profession. Similarly, provincial budgets and grants are materially affected by enrolment and organization which are reflected in building program and operating costs. Statistics also provide a picture of rate of progress through the schools, success of the curriculum, etc.

At the municipal level, detailed statistics on teachers, pupils, and finances are equally essential in the administration of the schools. Municipal authorities watch developments in costs, transportation, insurance, pensions, special classes, evening classes, and such. They compare their data with those of other communities of similar size and use this information in formulating their policies.

Education statistics provide teachers' associations with data on teacher training, teaching load, salaries, pensions, tenure, and experience. They provide trustee associations with data on costs, current education trends, teacher qualifications, teacher supply and demand, and assist in forecasts which enable planning of new construction, etc. Statistics of pupil progress, teacher qualifications, teacher training, and school finances are of interest to parent-teacher groups.

Publishing firms and supply houses use school and pupil statistics to appraise market potentialities; business firms are interested in potential employees and their qualifications, also in the general level of education of the population for advertising, merchandising and market potentialities.

Writers, educationists, research students, and guidance counsellors find the Division's publications useful in their work.

Surveys are conducted and special compilations are made from time to time to meet provincial, national or international needs. The Bureau provides the United Nations Educational, Scientific and Cultural Organization, the International Bureau of Education, and a number of international yearbooks with the latest statistics and information on education in Canada. It also provides information on education for the Information Division of the Department of External Affairs and the Publicity Division of the Department of Trade and Commerce.

Higher Education and Libraries Section

Generally speaking there are two parallel systems of higher education in Canada – the French-Canadian system which tends to follow the continental European pattern with local adaptations,

and the system of the dominantly English speaking provinces which follows the English-Scottish tradition. There are special difficulties in designing questionnaires for the satisfactory reporting of both types of institutions.

Until 1948 no attempt was made to collect data for the current year; one comprehensive questionnaire calling for data on finances as well as staff and students, was sent out at the end of each academic year. More recently, however, the urgent demand for current information on number of students has led to the introduction of a questionnaire on the year's enrolment by faculty, as soon as registrations are completed in the fall.

Methods of Obtaining the Co-operation of Respondents

The relationship between the Education Division and the universities and colleges is one of mutual co-operation. The authority of the Statistics Act has never been invoked to obtain the data required. The Director of the Division maintains personal contact with the universities through occasional visits and by participation in the annual conferences and activities of the National Conference of Canadian Universities and other organizations of university personnel.

Co-operation is further promoted by the willingness with which the Education Division, in conformity with the general policy of the Bureau, has made special surveys and special compilations of data for individual universities or university organizations.

Co-operation and Liaison with Government Departments

It was agreed at the first Dominion-Provincial Conference on Education Statistics, 1920, that the Dominion Bureau of Statistics should collect the statistics on higher education directly from the institutions concerned. In consequence, the relationship between this Section of the Education Division and the Provincial Governments is more informal than that of the Elementary and Secondary Education Section. In practice, the Section obtains some data on finances from provincial sources for certain institutions mainly supported by provincial funds.

Statistics are obtained from the Defence Colleges of Canada with the co-operation of the Minister of National Defence. In return, the Department of National Defence is provided with data on enrolment and graduates of the universities and colleges for such purposes as the establishment of university military training units and the recruitment of personnel for defence purposes. This form of co-operation has developed through consultations with the Defence officials.

A recent co-operative project has been the collection of statistics on enrolment for the payment of federal grants to the universities and colleges.

The Director of the Education Division acted as a consultant in the planning of this project. The questionnaires were designed so that they could be used by both the Department of Finance and the Bureau thus avoiding duplication of effort in obtaining the statistics required.

The Division provides the Department of External Affairs with information on Canadian universities and colleges useful to foreign students seeking permission to study in Canada.

The Department of National Health and Welfare, which provides scholarships for training professional personnel, obtains data relating to their specialized field from the Education Division and, in return, provides the Division with information on expenditures for scholarships, number of scholarships, etc.

Methods of Follow-up, Editing, and Compilation

The university registrars or other officials to whom the questionnaires are sent are requested to return the information within one month from the date of receipt of the questionnaire. At the expiration of that time, a follow-up letter is sent. This is usually all that is required.

The main problem in editing the returns is one of co-ordination. In some cases, enrolment in courses of the French universities, which require the baccalaureate for admission, is reported under the postgraduate classification of students. It requires an accurate knowledge of the various courses in each institution to distinguish between students specializing in certain courses of undergraduate status and those proceeding to more advanced scholarship considered of postgraduate level.

A second problem is one of duplicated enrolment between faculties, and between the enrolment reported by affiliated institutions and that reported by the parent university. The questionnaire contains a section for reporting duplicates. In some cases there are affiliated institutions located in provinces other than the one in which the parent university is located. In such cases the enrolment must be adjusted to obtain correct provincial totals.

The returns are checked with those of the previous year. Where anomalies appear all sources of information in the Division are checked. Where no satisfactory explanation is available a letter is sent to the registrar requesting an explanation of the apparent discrepancy.

When the editing is completed the tables are compiled by adding machine.

Integration with Work of Other Bureau Divisions

Data on population and occupations from the Census Division are used by this Section for the study, "Supply and Demand in the Professions", and for special studies on the proportion of the population attending university.

The Section contributes statistical data and short articles on higher education to *The Canada Year Book* and the *Canada Handbook*. Financial data are prepared for the Public Finance Division and for the Research and Development Division for use in the National Accounts.

Statistical Gaps, Appraisal of Quality, and Program for Improvement

Due to lack of uniformity in the accounting systems of the universities, it is not possible to obtain financial data in the detail required. Capital expenditures made by the provinces or by church authorities for institutions under their control are, in some cases, inseparable from general accounts.

Statistics on enrolment by academic years are largely estimates. There is no uniformity of matriculation requirements and, in consequence, there is variation in what is considered the first academic year. In some cases there is no academic year system; in others, the first two years are not separable. Under these conditions, studies on drop-outs and wastage are not reliable.

Some of the older and larger universities in Canada have no separate faculty of Science. Students specializing in Science are included with the students of the Arts faculties and their awards are classified as the Bachelor of Arts degree. There is a constant demand for the number of graduates in Science but no complete data are available.

Certain steps are being taken to overcome these difficulties. The business administrators of the universities, recognizing the need for more accurate financial statistics, have set up a committee to study present systems of accounting and to make recommendations toward more uniformity. A representative of the Education Division attended their meeting in 1952 to present the difficulties experienced by the Division in its attempts to co-ordinate financial statistics of the universities and colleges under present conditions.

In recent years several universities have provided data on awards in Science as distinct from the Arts awards. This practice is increasing.

It is planned to include a question as to the number of students entering university for the first time. This information, in conjunction with a knowledge of the admission requirements of each university, will provide a basis for study of the relationship between high school graduates and students proceeding to a university education.

To date, little information is available on the social or economic background of university students. Such data have been asked for by sociologists. This suggests the need for more special surveys.

An outstanding gap in the field of higher education is the lack of data concerning undergraduate scholarships. A survey of postgraduate scholarships was made in 1950-51 but no recent

survey of undergraduate scholarships and sources of financial assistance for undergraduate students has been made.

Uses of Statistics of Higher Education

Universities and colleges study trends in enrolment by faculties, expenditures, the influx of foreign students, etc., to assist them in building programs, and in providing staff, equipment, and libraries for future expansion.

Mention has been made of certain specific uses of the statistics of higher education by Federal Government departments. The Air Force Division of the Department of National Defence has introduced a system of mechanical tabulation for the personnel of the Air defence forces. With the assistance of the Higher Education Section all degrees awarded by Canadian, American, and British universities were listed and equated and a code system devised to indicate the educational status of all personnel and of new recruits seeking admission to the Royal Canadian Air Force.

The Department of Labour uses statistics on enrolment and graduates by faculties as a check against returns made by their regional officers.

International organizations such as UNESCO and the International Bureau of Education require statistical and general information on higher education in Canada as part of their world wide studies of economic and social conditions.

Local Chambers of Commerce and Boards of Trade use statistics of higher education for their local district as an inducement to attract industry and new settlers to the area.

Research workers, social agencies, guidance officials, teachers and sociologists use the surveys of higher education for research projects or as source material for instruction of their classes.

Library Statistics

The statistical survey of libraries in Canada, now published as Part III of the Biennial Survey of Education, was inaugurated in 1921 as a supplement to the Annual Survey of Education.

The libraries at present covered in the Survey include public libraries, regional libraries, university and college libraries, Government libraries, professional and technical libraries, business libraries, and other special libraries, such as libraries for the blind, and travelling libraries.

The data obtained from public libraries include: the volumes in the library classified as adult fiction and non-fiction, juvenile reading material, and reference books; the circulation or loans made for each class of volume; the borrowers; the staff, their qualifications and salary range; revenues and expenditures broken down by sources of revenue and main items of expenditure; and auxiliary services such as audio-visual services and com-

munity programs related to adult education. For other types of libraries, the data collected are similar to those of the public libraries except that the contents are not classified. Emphasis in the statistics is placed on availability of the material to the population served. In recent years more attention has been given to auxiliary services and more detail asked for on staff qualifications and provisions for security for the employees.

Methods of Collection, Follow-up, Editing, and Compilation

Lists of libraries are established with the co-operation of provincial library authorities, provincial library associations, and the Special Libraries Association.

Prior to sending out the questionnaire, the list of libraries used in the previous Survey is checked against those published by provincial officials to obtain the names of new libraries and of individual libraries absorbed by larger regional libraries or closed during the two previous years. In cases where no provincial list is published, the regional library association or some other source is consulted for the necessary revisions.

The questionnaire is sent to the chief librarian of each library. In the larger city libraries with several branches, and in regional libraries, statistics for all branch libraries are included on the questionnaire returned by the librarian of the central library. Returns from the libraries are usually prompt and very few follow-up letters are necessary.

The returns are compared with those for the previous year and checked with the provincial and municipal reports. There is little editing required beyond correction in addition. Compilation is by adding machine.

The Director of the Education Division and the clerk responsible for the preparation of the Survey maintain membership in the Canadian Library Association and participate in committee projects of the Association that require library statistics. The publications of the Dominion Bureau of Statistics are sent free of charge to the co-operating libraries that request them.

Co-operative Arrangements

The annual reports of the provinces on library service are sent to the Education Division each year, as are also those of the larger municipal libraries. From these reports, the Education Division is kept up to date on the individual libraries, library legislation, provincial grants, and the general progress in the field at the provincial and local levels.

The Canadian Library Association through its numerous affiliated organizations gives considerable publicity to the Survey of Libraries by stressing the value of library statistics to the

librarians of Canada. In return, the Education Division has assisted the Association in projects undertaken by committees.

The Schools of Library Science in Canada include library statistics in their curricula. Each year the McGill School visits the Dominion Bureau of Statistics, at which time a short talk on library statistics is given to the students. The Director of the Division gives a lecture on library statistics to students in the University of Ottawa Library School.

These co-operative services promote the goodwill of the librarians and are a contributing factor in obtaining the statistical and other information required.

A question relating to revenues of municipal libraries has been included on the library schedules in order to obtain information required by the Public Finance Division.

Appraisal of Quality

The present coverage of libraries omits certain libraries, e.g., the parish libraries of Quebec and church libraries of other provinces, hospital libraries, libraries of schools below college grade, prison libraries, libraries of certain associations, private libraries, and commercial lending libraries.

Uses of Library Statistics

The statistical survey of libraries is used by library administrators, library schools, librarians proceeding to postgraduate degrees in the field of library science, the Canadian Library Association, various government departments and the Federal Civil Service Commission, as well as by book publishers and publicity agents.

Adult Education and Research Section

The field of adult education in Canada is expanding rapidly. The first partial survey in this field by the Bureau was conducted in 1951 to provide statistical data for three of the principal media: universities and colleges, the Departments of Education, and cities and towns of 10,000 and over. It is expected that the field will be expanded to cover all colleges and schools offering adult education and gradually to include a wide variety of such activities as listening forums, film screen-

ings, folk schools, workers' education, So-Ed (social education) activity, women's institutes, etc. An attempt has been made to keep adult education separate from recreation, training, commercial enterprise, regular education, etc., but there are no clear-cut lines of demarcation in many cases. Fairly comprehensive questionnaires were devised and sent to school board secretaries and to those in charge of adult education in the Departments of Education and the universities and colleges concerned. The response was good.

The returned questionnaires were edited and checked for consistency, and where possible, checked against other sources. In future years they will be checked against previous reports. Mechanical tabulation, apart from the use of a comptometer, has not been used as yet. Copies of the first survey have been sent to all respondents to maintain interest. It is intended to maintain close co-operation with the provincial Departments of Education to encourage them to collect pertinent information and to avoid duplication. Contacts will be kept open with the colleges and the Canadian Association for Adult Education. Attendance at annual conventions should provide an opportunity for the discussion of statistics to be collected, encourage a more adequate statistical coverage of activities, and foster comparability of data.

A separate publication will be issued annually until sufficient material is available and well enough organized to become Part IV of the Biennial Survey of Education.

The first report presents factual information on number of staff and enrolment, materials prepared and stored in depots, and types of activities. Many phases of adult education, including financial data, are yet to be compiled. When more fully developed, data on enrolment, etc., will be published in *The Canada Year Book*, and data on finance will be incorporated in figures on National Income.

A Reference Paper entitled *The Organization and Administration of Public Schools in Canada* was published in February, 1952.

Some exploratory work has been done on the media of mass communication, and it is expected that education data from the census will be available within a few months. Other projects planned include a survey of museums, bringing up to date a survey made in 1938, and a revision of *Census Data for Counsellors*, using 1951 data.

DOMINION BUREAU OF STATISTICS
EDUCATION DIVISION

Chart showing function
and organization

DOMINION BUREAU OF STATISTICS

EDUCATION DIVISION

Responsible for obtaining completeness and comparability in statistics of Canadian education at all levels. This involves close collaboration with 10 Provincial Departments of Education which operate school systems. Research into various aspects of the educational field. The staff of the Division numbers 11.

Director, J.E. Robbins, Statistician Grade 7
2 Clerks Grade 2A

ELEMENTARY AND
SECONDARY EDUCATION
SECTION

Makes biennial Survey of Elementary and Secondary Education in Canada. Liaison with Provincial Departments of Education. Makes annual survey Teachers' Salaries and Qualifications and periodic special surveys. Collates statistics of education finance at all levels and for all types of schools. Collaborates with national and international education organizations. The staff of the Section numbers 5.

Supervisor, Statistician Grade 3.

HIGHER EDUCATION
AND LIBRARIES
SECTION

Makes biennial Survey of Higher Education in Canada. Special surveys for Reference Papers. Collaborates with national and international education organizations. Makes biennial survey of public, academic, and special libraries. Maintains directory of libraries in Canada.

Staff - 2

1 Principal Clerk
1 Statistician Grade 1

ADULT EDUCATION
AND RESEARCH
SECTION

Surveys adult education conducted by Provincial Governments, universities, local organizations, etc. Research on education data obtained in the census, and other special studies.

Staff - 1

1 Statistician Grade 3

PUBLIC
SCHOOLS

Sorts, revises, and tabulates data from annual reports of teachers in public schools. Prepares tables for annual bulletin on teachers' salaries, etc., and other tables on teachers and pupils.

Staff - 2

1 Clerk Grade 3
1 Clerk Grade 2A

FINANCE

Collects and processes financial statistics from reports of public and private schools, and federal and provincial public accounts. Estimates salaries and wages in education for National Income Section.

Staff - 1

1 Clerk Grade 2B

PRIVATE
SCHOOLS

Collects and tabulates reports from private schools. Extracts data from provincial reports. Prepares tables for Biennial Survey, Year Book, Handbook, etc. Compiles bibliography of articles on elementary and secondary education from periodicals.

Staff - 1

1 Clerk Grade 3

Number, Periodicity and Nature of Reports

Report	Number	Periodicity	Contents
Teachers' Salaries and Qualifications in Eight Provinces	1	Annual	Classifies teachers in all provinces except Quebec, according to salary level, certificate, and experience, separately for city, town, and rural schools.
Preliminary Statistics of Education	1	Annual	This memorandum presents preliminary statistics on schools, teachers, and enrolment for all schools except institutions of higher education; also financial statistics.
University and College Enrolment Reported in Current Year	1	Annual	Enrolment of full-time students at university level in regular session for representative universities and colleges.
Elementary and Secondary Education	1	Biennial	Presents statistics of students, teachers, and finance for public and private schools. Includes a bibliography and index to literature on Canadian education.
Survey of Higher Education	1	Biennial	Lists all universities and colleges, and presents statistics on enrolment, graduates, staff, and finances. Includes a bibliography of Canadian articles on higher education.
Survey of Libraries	1	Biennial	Lists public, university, government, and special libraries, and presents statistics on contents, staff, and finance.
The Organization and Administration of Public Schools in Canada (D.B.S. Reference Paper, February, 1952)	1	Published 1952	Contains a chapter on each provincial system and a final chapter on the activities of the Federal Government in the field of education.
Survey of Adult Education in Canada, 1950-51 (D.B.S. Reference Paper, May, 1952)	1	Published 1952	Covers staff and enrolment, study aids prepared or stored, and courses or activities conducted or promoted, for selected universities and colleges, the Departments of Education, and towns of 10,000 or over in the field of Adult Education.
Supply and Demand in the Professions in Canada, 1945	1	Decennial	Projects the first bulletin issued in 1937. Utilizes the records of university graduates for 25 years, 1941 census data, etc., in estimating the distribution of professional people and potential clientele.
Canadian Census Occupational Data for Counsellors, 1947	1	Decennial	Attempts to place census data and other related statistical information in readily-observed juxtaposition.
Directory of Private Schools in Canada, 1950; Elementary, Secondary, and Commercial (D.B.S. Reference Paper No. 22)	1	Occasional	
List of Public Secondary Schools in Canada, 1950 (D.B.S. Reference Paper No. 27)	1	Occasional	
Post Graduate Scholarships and Fellowships open to Canadian Students (D.B.S. Reference Paper No. 21)	1	Occasional	List of fellowships and scholarships offered by Canadian and outside organizations and universities showing values and conditions.
Post Graduate Students in Arts and Science, English Language Universities, 1948-49 (D.B.S. Reference Papers 1949, No. 7)	1	Special Published 1949	Shows number of students by Department and assistance available to them in the form of scholarships, fellowships, and part-time employment.
Students' Cost of a Year at Canadian Universities (D.B.S. Reference Papers 1949, No. 6)	1	Occasional	Presents figures on cost collected from a sample of university students in 1947-48 by the National Federation of Canadian University Students, also figures on summer earnings.

DOMINION BUREAU OF STATISTICS GENERAL ASSIGNMENTS DIVISION

The General Assignments Division, a recent addition to the Bureau, was originally organized in the Economics Branch of the Department of Trade and Commerce to provide special statistical services for economic forecasting. Since the Division was engaged in developing new surveys and since most of its other statistical requirements were for material available in the Bureau, it was transferred here in April, 1950. The Division has been assigned additional duties since then, and as it now exists, is divided into three main Sections: Forecast Surveys, Corporation Profits, and Organization and Planning.

The **Forecast Surveys Section** includes Capital Expenditures, Supply of Building Materials in Canada, the Construction Census and Building Permits, all of which are interrelated. Part of the statistical material necessary in the Construction Census is obtained in the course of doing the capital expenditures survey work, and the building materials forecast obtains estimates for the year ahead for comparison with demand as indicated by the forecast of investment.

The **Corporation Profits Section** is responsible for conducting quarterly surveys of corporation profits on a sample basis for all sectors of the economy. This work is still in the development stage. Also the timing, blow-up and sampling techniques, and methods of filing, are different from the work of the other Sections, requiring the full attention of a senior member of the staff.

The most important work of the head of the **Organization and Planning Section** is to review methods of procedure and investigate problems in the work of the Corporation Profits and Forecast Surveys Sections. The allocation of staff to the other Sections including temporary transfers from one section to another to meet requirements during peak periods is also the responsibility of the head of this Section. Other duties of a general nature centralized within this Section include; the preparation of special purpose compilations for economic studies being made by other government agencies; a continuous survey of new firms in an effort to secure complete coverage for all survey work conducted in the Bureau; design and maintenance of all filing records within the Division; supervision and allocation of the stenographic pool services.

Because of the diversity of work undertaken in the Forecast Surveys and Organization and Planning Sections, it has been necessary to discuss the work of the Units within these Sections separately, in the outline which follows. In the first part of the statement given below, only the objectives of the work of the various Units are dealt with.

Capital Expenditures

The main objective of this work is to provide a forecast for the year ahead of the probable level of capital investment on new construction and machinery and equipment in all parts of the Canadian economy. Construction is defined to include all types of structures. Building construction is only a part, although a large part, of the total. Other structures, such as dams, highways, sidewalks, sewers, bridges, mines, railway lines, transmission lines, etc., are also included. The machinery and equipment categories include railway rolling stock, motor vehicles used in business; manufacturing, mining, and construction machinery; equipment for power plants; hospital and office equipment, and a wide variety of other capital goods. Stated briefly, the surveys are intended to cover capital expenditures made for the purchase of structures and machinery and equipment used either to produce goods or to provide services.

In addition to new capital outlays as described above, a forecast of repair and maintenance expenditures on all capital assets in use in the economy, is also required.

Similar outlays on capital goods, both new and repair, covering the two years prior to the forecast also must be available for publication with the forecast material.

All these data must be obtained in sufficient detail to enable classification by municipality and within municipality by approximately 225 industrial groups (those in use in the Standard Industrial Classification). Also, the data must be classified to meet the different needs of the National Income Section of the Bureau and the Economics Branch of the Department of Trade and Commerce and to produce separate estimates of private and public investment.

The first investment forecast must be available in published form for tabling in the House of Commons by March 31st, each year. A second estimate of the forecast containing any changes in intentions since the time the first forecast was made, is required by June 30th, each year.

Supply of Building Materials in Canada

The purpose of this work is to obtain estimates for the year ahead of the production and supply of the principal building materials used in the construction industry for comparison with the demand for these materials, as indicated by the forecast of investments in construction. This information must be prepared for release in printed form by March 31st, each year.

Construction Census

The main objective of the construction census is to produce figures for the industry "proper", similar to those provided for the various manufacturing industries, that is, value of work performed by type of structure, value of materials used, salaries and wages paid, number of employees, etc. Secondly, there is also an interest in the same statistics for construction work performed in other industries and outside of industry altogether, such as construction work done by the railways with their own employees and by individuals building their own homes. It might be pointed out here that the Capital Expenditures survey provides figures on construction expenditures by the industry making the expenditure, but did not, until recently, obtain any breakdown of these figures into the type of structure on which outlays are being made. The Capital Expenditures surveys do not provide any information on the other principal statistics of the construction industry. However, for 1951, an additional sheet was added to the Capital Expenditures schedule, which does ask for a break down of construction expenditures by type of structure. This will eliminate the necessity of canvassing construction contractors for value of work performed by type of structure, but other methods will have to be used for collecting information on value of materials used, salaries and wages paid, number of employees, etc.

Building Permits

This Section is concerned with the provision of monthly information on the value of building permits, issued by over 800 municipalities in Canada. Detail is given on type of structure, such as dwelling, store, factory, church, school, hospital, public garage, etc., and also whether it is new construction, addition, alteration, or repair.

Corporation Profits

The objective of this work is to produce up-to-date estimates of the trend of corporation profits on a quarterly basis for 17 main industry groups, covering all sectors of the economy. The methods used in this survey generally follow those worked out by the Research and Development Division which conducted the survey during its first two years. The General Assignments Division is now assuming responsibility for its continuance.

New Firms

The main object of this work is to obtain general information on all new firms coming into existence in the country, if possible, prior to the commencement of operations and before the firm has made any capital outlays. Information is requested concerning the nature of the firm's business, source of funds (whether foreign or domestic, and if foreign, the name of the country), expected date of commencement of operations, products to be produced, expected number of employees, and such general information, as will enable classification of the new firm for inclusion in various Bureau surveys.

Miscellaneous

The Division has, in addition to the other duties listed, been designated as a clearing centre for certain kinds of information. The principal reason for this arrangement is to avoid duplication of effort in answering requests of a similar nature.

In addition, numerous special purpose tabulations are prepared for the use of economic research branches in various government departments. In most instances, it is a question of reclassifying material available in the Bureau for specific investigations. The tabulations often consist of a combination of statistics drawn from several other Divisions of the Bureau.

Methods of Collecting the Basic Data

Capital Expenditures.—The basic data used to arrive at gross capital and repair and maintenance expenditures are obtained from a variety of sources, and, consequently, there is variation in the method of collecting, depending on the sector of the economy being dealt with, and on whether or not a questionnaire survey is practical. The bulk of the expenditure estimates are calculated from direct mail surveys of the agencies making the expenditure. The coverage in these surveys varies with the degree of response and the extent of coverage attempted, whether complete or on a sample basis¹. To meet the objectives outlined earlier, three separate annual surveys are necessary.

In the first survey, a forecast of repair and capital expenditures for the coming year is obtained along with a preliminary estimate of repair and capital expenditures for the year just ended. Data, covering both years, are obtained on the same questionnaire form. This survey is conducted during November and December of each year and involves coverage of about 18,000 establishments.

The second survey obtains actual repair and capital expenditures for the year just ended. This survey also covers 18,000 firms and asks for final data for correction of the preliminary data secured the previous November. Questionnaires for this survey are sent out in March.

The third survey is conducted in June and asks for any revisions of the forecast of repair and capital expenditures given in the previous November or December. This survey is conducted on a sample basis and covers about 2,000 establishments. The purpose is to determine if there are any marked changes in investment plans since the earlier forecast.

In these surveys, different types of questionnaires are used for different industries in an attempt to clarify, as much as possible, the concept of capital investment as used in this work. With a few

1. Detailed information on coverage is given on pages 40 to 42 of *Private and Public Investment in Canada, Outlook 1952*.

specific exceptions, these concepts coincide fairly well with accepted accounting definitions including those of the National Accounts. The principal difficulty arises in transmitting them in condensed form to reporting firms.

In the first two surveys, only sample coverage is attempted of firms with less than \$100,000 annual value of production or gross revenue in manufacturing, mining, and in the trade, service, and utility fields. Coverage of firms or establishments operating in other sectors, where the direct survey is used, is determined by size according to type of operations; e.g., in the case of municipal water works, all cities or municipalities with a population of over 25,000 are canvassed; full coverage of theatre changes and banks is attempted; hotels and hospitals are canvassed, if they have accommodation for a certain number of persons, etc. Coverage in the third survey, conducted in June, is based on a stratified sample selection within industries, which includes about 10 per cent of the number of firms canvassed earlier, and in terms of previously reported expenditures provides about 70 per cent coverage.

Although the direct surveys conducted from this Division provide the basis for estimating capital outlays in most sectors of the economy, basic data are also required for other sectors, where mail surveys are either unnecessary or impractical.

Federal Government outlays for the past and for the year ahead are obtained from the Department of Finance. Past expenditures are extracted from records kept of various government department outlays, while those for the future are taken from departmental estimates of expected outlays for the coming year, which are submitted to the Department of Finance.

Provincial and municipal capital expenditures are obtained from a special survey of these bodies, conducted for this Division by the Public Finance Division of the Bureau. As in the case of the Federal Government, accounting records for the past and budgets for the future, yield most of the basic data required.

Housing estimates for the year ahead are made on a different basis from those based on information submitted directly by business or government agencies. Appraisals of the probable volume of housing construction are made by field representatives of the Central Mortgage and Housing Corporation who consult local officials, builders, contractors, supply firms, and other individuals and firms concerned with future housing construction projects. Using information obtained from these sources and their own knowledge, the representatives of the Corporation make estimates of privately initiated housing for all municipalities in Canada with a population of less than 5,000, and of the total volume of public or government initiated housing likely to be undertaken in the next year. Finally, an allowance is made for conversions which amount to a small part of the total allowing for probable changes in construction costs. Supplementary estimates are then prepared for the value of new construction work per-

formed and alterations and repair and maintenance work likely to be undertaken in the year ahead. Expenditures on housing in past years are also calculated by the Central Mortgage and Housing Corporation from surveys of housing starts and completions conducted by the Special Surveys Division of the Bureau. Details of this survey are to be found in the section of this publication devoted to the work of the Special Surveys Division.

Since so far, it has been considered impractical to collect information by mail surveys on investment in agriculture, fishing, independent stores, and miscellaneous commercial and service groups, other methods of estimating have been necessary. Past expenditures on farm machinery are calculated from available data on sales. Outlays for the year ahead are calculated on current farm cash income, producers expected sales, and other related data. Fishing, a comparatively small item, is based on data available on past expenditures, which is projected into the future on the basis of current expectations in the industry. Capital outlays of independent stores are based on the trend exhibited by reports from chain and department stores and the ratio sales of independent stores to the total sales of chain and department stores. Miscellaneous commercial and service groups are also based on the trend in related fields and on the ratio of revenue of such groups, as published in "Taxation Statistics" to that in the related fields. More detailed information on the basic material used and the methods employed is available in the files of the Capital Expenditures Section.

Supply of Building Materials in Canada, Outlook.—Estimates of the expected production of principal building materials during the year ahead are obtained from the manufacturers of these materials by means of questionnaires sent through the mail. The questionnaire simply asks for the expected percentage change in the volume of production during the coming year. Other basic data for weighting the percentage changes given and arriving at estimates of volume of production are available in the Industry and Merchandising Division of the Bureau.

Construction Census.—Up to the present, the principal statistics of the construction industry have been collected by the Industry and Merchandising Division from construction contractors and from some of the larger concerns doing their own construction work, by questionnaires sent through the mail.¹ Important pioneer work has been done, but because of the difficulty in obtaining adequate coverage, a new method is being tried. As mentioned previously, an additional sheet has been added to the capital schedule circulated to business and institutions, which asks for a break down of construction expenditures by type of structure. Thus, value of work performed is now obtained in the same detail as by the former method. The other statistics of the industry, such as materials used, employment, salaries and wages, etc., will have to

1. This is now being taken over by the General Assignments Division.

be obtained from other sources or by other methods. Materials used will probably be obtained by a sample survey of the construction industry; employment and salaries and wages paid, by a similar method or from existing Bureau records. Investigations of the adequacy of these methods are now being made.

Building Permits.— Information on the value and type of construction, as indicated by the building permits issued, is obtained monthly from questionnaires sent to over 800 municipalities in Canada.

Corporation Profits.— The basic data, on which estimates of the trend of corporation profits are based, are collected by questionnaire from a sample of incorporated companies. The universe from which this sample was picked is composed of over 40,000 corporations in all branches of activity. Further detail on the method of collection of data may be found in the chapter on the work of the Research and Development Division.

New Firms.— In this instance, a considerable amount of work is necessary simply to obtain the names and location of prospective new firms. A continuous search is conducted through various construction journals and financial publications, such as the *The Engineering and Contract Record*, *Industrial Canada*, the *Financial Post*, *Canadian Journal of Commerce*, *Western Business*, etc. These sources are augmented by a weekly list of new incorporations, supplied by the Department of the Secretary of State and also by a review of all provincial gazettes, as they are issued. Extensive use is also made of the records of the Unemployment Insurance Commission, which list separately all firms making their first application for unemployment book stamps. All names of prospective new firms obtained from such sources are checked against existing files, both in this Division and elsewhere in the Bureau, to ensure that they have not already been covered. Remaining firms are then sent a nature of business form for completion.

Miscellaneous.— Most of the basic data required for the special purpose tabulations mentioned earlier, are obtained from within the Bureau with the exception of the data for a statement, issued every second month, on the Appraisal of Construction Prospects. In this instance, the basic material is collected by questionnaire by the Canadian Construction Association for this Division.

Methods of Obtaining the Co-operation of Respondents

In addition to the detail outlined below, where applicable, reference is made on the schedules to the authority of the Statistics Act. In general, however, goodwill is sought through correspondence, and no further specific reference is made to the obligatory nature of the reports except in extreme cases of delinquency.

Capital Expenditures.— Since this is a comparatively recent survey and more than the usual number of difficulties were encountered in defining capital outlays in keeping with the economic concepts in use, it was necessary to make an extra

effort to obtain the goodwill of respondents. Considerable stress has been laid on explaining to firms why the surveys are being undertaken and to what use the results are being put by government. Each participating firm was assured that the information submitted would be treated as confidential and that only group totals would be published, so that the plans or records of any one company would not become known to competitors. On several occasions, the Minister of Trade and Commerce communicated with every firm participating in the investment survey, thanking them for their co-operation and sending them a summary of the results of the survey. The Minister also approached a number of business organizations, such as The Canadian Manufacturers' Association and the various Chambers of Commerce, asking them to impress upon their membership, not only the importance of participating in the investment forecast surveys, but also the importance of giving their best judgement as to the likely amount of capital expenditures they would be making in the coming year.

Similar approaches have been employed for the capital expenditures surveys which cover the sectors other than business, i.e., institutions and governments. In cases where the co-operation of Provincial Government bodies was required, letters of introduction were sent by the Minister of Trade and Commerce to the various provincial Premiers, asking that arrangements be made for officials of the Bureau to interview the appropriate officials in the government departments in which they were interested.

Supply of Building Materials, Building Permits, Construction Census, New Firms.— In all of this work, the only direct effort made to ensure the co-operation of firms has been, as a rule, through the original covering letter, sent out when the survey was first started. As in the capital expenditures surveys, this first letter introducing the survey outlined the purpose of the survey being conducted.

In addition, in the construction census, occasional personal visits are made to aid firms when difficult problems arise in the completion of the questionnaire form. The firms are also instructed to call upon regional officers of the Bureau for assistance, where this is necessary. The Bureau also consults with officers of the Canadian Construction Association, which is located in Ottawa, regarding any problems in dealing with the construction industry.

Corporation Profits.— Since this study has been inaugurated by the Research and Development Division, the methods used to obtain the co-operation of companies is covered in another chapter. For the past year, however, the General Assignments Division has assumed responsibility for the correspondence connected with this survey. A series of personal interviews was conducted by the head of the Division and a member of the Research and Development Division. Letters of introduction from the Dominion Statistician and the Deputy Minister of the Department of Trade and Commerce were first sent out, asking for the co-operation of the firms to

be interviewed. These interviews were, for the most part, confined to large firms who maintained that they were unable to comply with our request for information on profits. After explaining in detail the purpose of the work and possible alternative ways of reporting, a number of these firms decided to come into the survey.

Appraisal of Construction Prospects.— Little difficulty is encountered in conducting this survey, since it is undertaken by the Canadian Construction Association for the Bureau, and also because respondents are keenly interested in the material provided from the results of the survey which is distributed to them.

Co-operative Arrangements

An indication of the type of co-operative arrangements necessary in the work of this Division has already been given under "Methods of Collecting the Basic Data" where it was pointed out that part of the statistical material required in our work is obtained from or through other agencies. Most of these arrangements were made on an informal basis since, for the most part, the data requested are readily available. In instances where this is not the case or where timing is an important factor, personnel from this Division are assigned to help with the work. Also where the Division is making specific use of data collected by other agencies, discussions are arranged with these groups to outline our particular needs so that these may be taken into account in the collection process. Similarly, the needs of other agencies are taken into account in the work processed in this Division. Attendance at meetings and discussions of this sort are an important part of the work of the Division particularly in the field of capital expenditures and corporation profits. Some examples of the types of arrangements made are outlined below.

Integration With Work of Other Bureau Divisions and Other Departments

In most of the work of this Division the general principle is followed of consulting with other Divisions of the Bureau regarding the most appropriate means of collecting the basic data. This results in numerous arrangements for integration of work. A few examples of these internal arrangements are given below:

Capital Expenditures.— The report on capital expenditures *Private and Public Investment, Outlook* is issued jointly by the Bureau and the Economics Branch of the Department of Trade and Commerce. Although the statistical material and text are prepared in this Division, frequent consultations are held with the Economics Branch on all aspects of the work, as they are concerned not only with the statistical material provided but also with statements made in the investment forecast concerning the general economic outlook.

In addition, so that capital expenditures data may be matched with production, employment, or

other statistics for individual establishments, firms or localities, the Standard Industrial Classification of Industries is followed. This is essential in the work of this Section since the method of estimating for non-reporting firms is based on a measure of size as indicated by the value of production, revenue, employment, etc., all of which are secured from other Sections in the Bureau. Also capital expenditures have to be matched with other statistics in numerous special purpose tabulations prepared for economic use in other departments.

Supply of Building Materials.— As in the investment work, this is a joint undertaking with the Economics Branch of the Department of Trade and Commerce. The statistical material for the report is prepared in this Division and the text is written in the Economics Branch. The survey on which the report is based is integrated with one of the monthly surveys of building materials conducted by the Industry and Merchandising Division. The mechanics of integration involve the enclosure of our questionnaires with other forms sent out monthly by the various Sections of the Industry and Merchandising Division, and the transfer of the completed questionnaires to this Division, as they are received.

Corporation Profits.— One of the main uses of the profits estimates obtained in this survey is to aid in estimating National Income. It was for this reason that the study was initiated by the Research and Development Division, and close co-operation with this Division will be necessary in future development of these estimates.

New Firms.— As many Divisions in the Bureau, in addition to the General Assignments Division, are interested in securing the names, addresses and other pertinent information relative to firms commencing business for the first time in Canada, they forward to this Division the names of any prospective new firms which they discover during the process of their regular work. These firms are then contacted in a routine manner with a nature of business report for completion not only on behalf of the originating Section but also in our own interests. As each list of prospective new firms is completed, the names of the firms are checked by the various Divisions in the Bureau against their existing indexes to ensure that they are not already contained in the Bureau records. In addition, a Section of the Industry and Merchandising Division conducts an independent search of city directories and Dun and Bradstreet publications to supplement the source material from which this Division secures the names of new firms to be contacted.

Methods of Follow-up, Editing, Checking, and Compilation

Capital Expenditures.— Because of the necessity for the early release of investment forecast data, an intensive follow-up procedure is used to secure the forecast reports. When the schedule is sent out, immediate attention is requested. Two weeks later, a reminder in the form of a card is sent to non-respondents. After an additional period

of two weeks, a second follow-up notice including additional forms is sent out, if necessary. Ten days after this, those who have not replied, are contacted by telegram or telephone, depending on location. In this way, it is usually possible to get at least an 80 per cent response.

Those responsible for editing and checking the schedules are supplied with printed instructions for this purpose, and problem cases are referred to the head of the Section.

Adding machines, calculating machines, pegboard and Hollerith cards are all used in different stages of the compilation procedure. Preliminary estimates of the trend of investment are made as the schedules are received and before they are edited. This work is done by adding machine and calculator. For the final report, the pegboard is used for compilation of the breakdown of construction by type of structure, which is given on one half of the schedule, and the Hollerith method is used for the compilation of capital expenditures by industry, which are given on the other half of the schedule. Several different types of printed work sheets are then used in the course of making estimates for non-reporting firms and other final adjustments necessary in arriving at overall final figures. In addition, historical card records are maintained for each firm and for separate establishments within firms, where these exist.

Roughly, the same procedure is followed in the survey of actual capital expenditures, but more time is allowed for reporting, since estimates have already been received from the firms being covered when the forecast was obtained.

Supply of Building Materials.— In this instance, follow-up notices are sent out for this Section by the Industry and Merchandising Division. These notices are usually included with the follow-up letters sent out for obtaining monthly production data. In this work, all compilations are made by hand with the aid of adding and calculating machines.

Construction Census.— Part of the construction census data is obtained in the capital expenditures survey and, consequently, the follow-up procedure is the same. Compilation is done by the peg-board method.

Building Permits.— A Hollerith machine compilation is made of all returns received by the 21st of the month following that for which the data are requested. Consequently, there is time for only one follow-up notice in this period. However, a second notice is sent to delinquent municipalities about the 20th of the month, and returns received after that date are compiled by hand and added to the results of the machine listings.

Corporation Profits.— Since most of the larger corporations take about three weeks to prepare their quarterly estimates of profits, and the completed estimates are needed about nine weeks after the end of the quarter, it is possible to send out only two follow-ups in this survey. The type of follow-up letter used is governed partly by the fact that the survey is not compulsory. As in the capital expendi-

tures survey, editing and checking instructions are supplied those responsible for this work, and the more difficult problems are referred to the head of the Section. Historical card records are kept for each firm, which are of particular help in the checking procedure. Compilations of basic data are made by the peg-board method, and printed sheets are used for later calculations made in the course of producing final estimates.

New Firms.— Three follow-up notices are used, spaced at intervals of two weeks, to secure nature of business reports from delinquent firms. The processing of the reports involves chiefly the coding of each firm on the basis of the Standard Industrial Classification of Industries, to allow for allocation of each operating firm to the proper Division in the Bureau. A continuous tabulation of the principal data reported is also maintained, classified by the year in which operations commenced and by industry within each year.

Statistical Gaps, Appraisal of Quality, and Program for Improvement

Capital Expenditures.— All figures for the capital expenditures report are estimates of overall total expenditure and all segments of the economy are covered. Consequently, there are no statistical gaps. However, the quality of the material varies with the quality of the basic data from which the overall estimates are made. Considerable information on this aspect of the work is given on pages 39 to 44 of *Private and Public Investment, 1952*. In general, it might be stated that, as far as the forecast is concerned, it has so far been fairly accurate in total. This, however, is not of necessity a measure of its worth. Policy decisions of government or business made on the basis of the investment intentions as published may have the effect of altering these intentions considerably.

Apart from the effect of such decisions, the reliability of estimates for both the past and future is dependent on coverage, interpretation by respondents of what is asked for on the questionnaire, and the quality of material available for making estimates in sectors not covered by survey. These aspects of the work are kept under constant review and improvements are made wherever possible. Consideration is being given to the use of sample surveys as a means of improving some of the independent estimates. Every effort is made to get the most recent material as a base for estimating expenditures for firms which do not report. Questionnaires are improved and concepts clarified wherever there is evidence of misinterpretation.

Supply of Building Materials.— Here, as in the investment forecast, production intentions of producers may be altered by business or government policy measures if it becomes evident from the forecast that shortages are apt to exist.

Only partial coverage of the building materials field is attempted in this work. Although most of the principal items are covered, decisions on what to

include are based largely on the current and foreseeable supply situation. The actual survey on which the forecast of materials is based is relatively simple. Manufacturers of these materials are merely asked for estimates of production in the coming year in terms of percentage change from the previous year. Most of the work comes at a later stage. Complete production figures for the previous year are not available at the time of the forecast and complete coverage of the selected materials is not obtained in the forecast survey. Therefore, the principal part of the work is in making estimates of total production for the previous year and in the weighting of reported percentage changes for projecting these estimates.

Construction Census.— Since the value of work performed in the construction industry is now obtained in the course of making the capital expenditures surveys, complete estimates of this statistic will now be available in the same form originally provided by the survey of construction contractors. These estimates will, of course, be subject to the same qualifications mentioned earlier under capital expenditures. Investigation of various means of obtaining other statistics of the construction industry, such as materials used, employment, etc., is now under way. Although considerable work may be involved in establishing appropriate procedures for obtaining these statistics, it is expected that in the long run there will be a significant saving of time, both in the filling out of questionnaires by the industry and in the work of this Division.

Furthermore, since construction expenditures by type of structure are now obtained on the capital schedule, it is possible to obtain a forecast of this information at the same time as the general investment forecast is being made. A number of firms have been asked about the possibilities of providing this information and have stated that it does not present any problems since it is part of the work they do in making up the forecast of total construction expenditures.

Building Permits.— Data on building permits are collected from all municipalities where it is known that such permits are issued and adequate records are kept. There has been a steady increase in the number of reporting municipalities over the past few years. For the most part there are no problems in obtaining the required information. However, the quality of the material is in some instances open to question, since it is an accepted fact that in the purchase of building permits, the value of construction to be undertaken is often understated.

Corporation Profits.— There are numerous problems still to be investigated in this field. In the first instance, since the survey is not compulsory it is not always easy to obtain adequate sample coverage. In addition, there are seasonal problems in such industries as construction, agriculture, and shipping which are difficult to overcome. Even among those firms which are reporting, accounting practices differ and continued investigation of the content of items reported will have to be made. To date it has not been possible to make any accurate checks of the

quality of the data being produced. All this work will be carried on in co-operation with the Research and Development Division.

New Firms.— The principal difficulty in this work is in securing the names of new firms. In spite of the variety of sources from which information is obtained, numerous projects, even large undertakings are frequently kept secret until all arrangements such as purchase of land, leases, etc., are completed.

Nature and Number of Staff Employed

Although the organization chart shows the distribution of staff on somewhat rigid lines, there is considerable elasticity and interchange of personnel from one Section to another. This is necessary since the interests of one Section encroach upon those of another and also because the heavy volume of work in the different Sections is periodical and, as a result, additional clerical assistance is necessary in many cases to complete certain projects within a specified time. The staff of the Division numbers 40.

The Organization and Planning Section is responsible for the allocation or distribution of staff. Also in addition to the responsibilities indicated on the organization chart the head of this Section must investigate all major problems encountered in the work of both the Corporation Profits Section and the Forecast Surveys Section. These latter Sections are primarily production units engaged in following established operational procedures in their respective fields. Investigations such as those mentioned earlier in connection with the construction census and capital expenditures work are the responsibility of the Organization and Planning Section, although technical assistance is provided in some instances by senior members of the other Sections.

Uses of Various Statistical Series

Capital Expenditures.— There are a number of uses for advance information on the probable level of capital investment. The size of the intended program for the year ahead is definite evidence of the outlook of management on future business conditions. Investment in new productive facilities is planned, as a rule, only when market conditions appear favourable for the product to be produced or the service to be provided. Conversely, if economic conditions appear unfavourable, investment in new productive facilities will, normally, be curtailed. Investment expenditures are, of course, not the only outlays affected in this way by changes in the general business outlook. They are, however, one of the few segments of gross national expenditure on which reasonably accurate advance information may be obtained. In addition, they constitute an important part of all expenditures made in the country each year. Recently they have been running in the vicinity of 20 per cent of gross national expenditure. Also, past history reveals that capital outlays tend to fluctuate more sharply with changes in the economic outlook than most other expenditure components and

DOMINION BUREAU OF STATISTICS
GENERAL ASSIGNMENTS DIVISION

Chart showing function
and organization

DOMINION BUREAU OF STATISTICS

GENERAL ASSIGNMENTS DIVISION

The main function of this Division is to provide special statistical services for economic forecasting. This part of the work includes the forecast surveys of capital investment and of the production of building materials and also the preparation of a variety of special compilations for economic use. Recently other related work has been added including the Corporation Profits Survey, the Construction Census, and the Survey of New Firms. In general, the Division is engaged in work which cuts across all industry fields and is primarily for economic use. The staff of the Division numbers 40.

Director, M. J. Mahoney, Technical Officer Grade 6

CORPORATION PROFITS SECTION

Responsible for conducting quarterly surveys of corporation profits, the work is done on a sample basis and is designed to produce estimates on profits for 17 main industry groups covering all sectors of the economy. To facilitate operational procedures the staff is divided into two units, one for clerical and one for analytical work. The staff of the Section numbers 3.

Supervisor, Supervising Clerk

ORGANIZATION AND PLANNING SECTION

Reviews statistical procedure and investigates all major problems in the work of the Corporation Expenditures and Forecast Surveys Section. Also included in this work is making arrangements for the temporary transfer of staff from one Section to another to meet work requirements during peak periods and related staff administration duties.

Other duties centralized within this Section include: the preparation of special purpose compilations for the specific use of other government agencies; a continuing survey of new firms in an effort to secure complete coverage for all survey work conducted in the Bureau; design and maintenance of all filing records within the Division, allocation of the stenographic pool services. The staff of the Section numbers 16.

Supervisor, Head Clerk

FORECAST SURVEYS SECTION

The Forecast Surveys Section includes Capital Expenditures, Supply of Building Materials in Canada, the Construction Census, and Building Permits, all of which are interrelated. Part of the statistical material necessary in the Construction Census is obtained from the capital expenditures survey work, and the building materials forecast obtains estimates for the year ahead for comparison with demand as indicated by the forecast of investment. The staff of the Section numbers 20.

Supervisor, Statistician Grade 2

CLERICAL

Staff - 1

1 Clerk Grade 3

ANALYTICAL

Staff - 1

1 Clerk Grade 4

SPECIAL COMPILATIONS

The preparation of special purpose compilations both on a continuing basis and as required for the use of other government agencies, to show detail not included in Bureau publications.

Staff - 3

Supervisor, Principal Clerk
1 Clerk Grade 3
1 Clerk Grade 2B

NEW FIRMS AND FILES

The supervisor of this Unit, besides being responsible for the corrections shown below covering the new firms surveys and the maintenance of filing, also assists the Chief of the Section in research investigations.

Supervisor, Clerk Grade 4

STENOGRAPHIC POOL

Staff - 5

Supervisor, Stenographer grade 2B
1 Stenographer Grade 2B
2 Typists Grade 2A
1 Typist Grade 1

BUILDING MATERIALS

To obtain estimates for the year ahead of the production and supply of the principal building materials used in the construction industry, for comparison with the demand for these materials as indicated by the forecast of investment in construction.

Staff - 2

Supervisor, Clerk Grade 3
1 Clerk Grade 2B

CAPITAL EXPENDITURES

To conduct surveys which will provide a forecast for the year ahead of the probable level of capital investment on new construction and machinery and equipment in all parts of the Canadian economy. Surveys are also conducted of similar actual outlays made in past years. The staff of eleven is divided into manufacturing and non-manufacturing as shown below to facilitate operational procedures.

CONSTRUCTION

The supervisor of this Unit is responsible for the operational work as shown below covering both the construction census and the survey of building permits.

Supervisor, Clerk Grade 4

FILES

Design and maintenance of all filing records within the Division including three main indexes, correspondence, ledger cards, and completed reports received from industry.

Staff - 2

1 Clerk Grade 3
1 Clerk Grade 2A

NEW FIRMS

A continuous survey of new firms to secure information which will enable proper classification of these firms in the Bureau records. This work is done in the interests of all Sections of the Bureau in an effort to obtain complete coverage in all survey work.

Staff - 4

1 Clerk Grade 3
2 Clerks Grade 2B
1 Clerk Grade 2A

MANUFACTURING

Staff - 7

2 Clerks Grade 3
2 Clerks Grade 2B
3 Clerks Grade 2A

NON-MANUFACTURING

Staff - 4

2 Clerks Grade 3
2 Clerks Grade 2B

CONSTRUCTION CENSUS

To produce annual figures to show the value of work performed, material used, salaries and wages paid, number of employees, in the construction industry proper as well as corresponding statistics for construction work performed by firms in other industries and not operating primarily in the construction field.

Staff - 3

1 Clerk Grade 4
2 Clerks Grade 3

BUILDING PERMITS

To provide monthly information in detail on the value of building permits issued by municipalities in Canada.

Staff - 2

2 Clerks Grade 2B

consequently have a greater effect on employment and income levels than indicated by their size. For such reasons they are followed with keen interest and have a direct influence on the policy decisions of both business and governments. Credit restrictions, curtailment of construction and mortgage lending have all been based in part on evidence of future spending patterns as indicated by the investment forecast.

Supply of Building Materials.— The main use of this report by government is in the assessing of probable supplies available for investment in construction as given in the investment forecast. It provides part of the background against which government policy decisions are made regarding the allocation of materials and the control of construction. The report is also used by industry in assessing the supply picture and in setting production targets.

Construction Census.— The material provided in this work is used principally by the construction industry, although the information it provides is also essential to a series of input-output studies being conducted in the Bureau.

Building Permits.— This survey is conducted primarily in the interests of other government departments and special tabulations are completed for

their particular needs. Those government departments using the material include: the Economics Branch of the Department of Labour, the Economics Branch of the Department of Trade and Commerce, the Provincial Statisticians's Office of the Government of Ontario, the Central Mortgage and Housing Corporation and the Business Statistics Section of the Bureau. The uses of the material are quite varied but, in general, it provides greater detail on types of construction within municipalities than available in the investment forecast.

Corporation Profits.— The data obtained from the survey will improve the reliability of the quarterly national accounts at present prepared on a confidential basis only. In addition, quarterly profits in themselves are an important indication of economic conditions.

New Firms.— The primary use of information on new firms is to keep various Bureau indexes up-to-date although it also provides information on the development and growth of industry in new fields. Several industry study bulletins have been prepared in the Economics Branch of the Department of Trade and Commerce on the basis of this information.

Number, Periodicity and Nature of Reports

Report	Number	Periodicity	Contents
Private and Public Investment in Canada, Outlook	1	Annual	Probable level of capital expenditures for the year ahead, on new construction and machinery and equipment. All sectors of the Canadian economy are included: business, institutions, government, housing.
Supply of Building Materials in Canada, Outlook	1	Annual	Appraises outlook for the production and supply of building materials for the intended construction program as indicated in Private and Public Investment above.
Private and Public Investment in Canada, Mid-Year Survey	1	Annual	A review of the original investment intentions as published in Private and Public Investment above, showing any changes in plans since the first forecast was made.
The Construction Industry in Canada	1	Annual	A report covering the value of building and other construction operations performed in Canada.
Appraisal of Construction Prospects	1	Bi-monthly	A statement of the value of construction work on the books of a selected group of large construction firms.
Canadian Merchandise Trade Commodity Analysis	2	Monthly	Special analyses of Canadian imports and exports by commodity group.
Labour Demand and Supply	1	Semi-monthly	An analysis of employment conditions for selected areas in Canada.

DOMINION BUREAU OF STATISTICS

HEALTH AND WELFARE DIVISION

Within the statutory function of the Dominion Bureau of Statistics to keep account of the nation's resources and activities, the Health and Welfare Division deals, on a day to day basis, with the human resources – the numerical change and growth of population, the assessment of its physical attributes, and to an increasing degree, with the interrelationship between the health of the Canadian people and their social and economic circumstances. The Division's activities have been influenced in recent years by the universal acceptance of the concept of social as well as physical well-being, of community health as well as individual health, and of the intimate connection between the fields of health and of welfare.

The principal functions of the Health and Welfare Division are thus to measure statistically the status, resources, and activities of the Canadian community from the viewpoint of health and welfare, and to provide the raw material for measurement of current population growth.

In the field traditionally considered as that of welfare, statistics of crime and delinquency and of welfare institutions have been collected for some years on a large scale and are described more fully below. In the field of health, the Division seeks primarily to secure nation-wide coverage of three main aspects of the health picture. The first of these is the national vital statistics in both their demographic and public health features. These, in general, measure the level of health of the country as a community. The second is national statistics of the volume of illness and of the characteristics of the persons and families who experience illness. The third aspect of the national health picture is the measurement of the services provided by hospitals and certain welfare institutions, and of the utilization of those services.

These three bodies of health statistics, when taken separately, serve the requirements of health administrators in the corresponding specialized fields. When taken together they make up a comprehensive picture of health status and health services both for Canada as a whole and for the various geographic subdivisions to which the statistics are routinely related.

Although the three types of health statistics are closely related by reason of intrinsic similarity of subject matter, the administrative considerations involved in collecting and compiling the source data differ quite widely. Consequently, there is a separate responsibility for each within the administrative organization of the Health and Welfare Division. There is a Vital Statistics Section, a Public Health Statistics Section and a Hospital or Institutions Statistics Section.

The present stage of development of the three types also differs substantially. The national vital statistics system is about thirty years old and the hospital statistics system about twenty years old. Both are mature, well-established systems, whereas the collection and compilation of illness statistics are still, as in most countries, largely in the organizational stage.

One feature common to all three is that the events and situations which are being measured are the constitutional concern of the Provincial Governments rather than of the Federal Government, so that in each case the source data must be collected and compiled within the framework of either formal agreements or informal working arrangements between the Dominion Bureau of Statistics and the Provincial Governments. Although these arrangements are negotiated and contracted bilaterally with each province their substance is usually prepared beforehand at technical conferences with full provincial representation. This technique, by providing a forum for the presentation of provincial views and requirements has proven extremely successful in preparing the ground for subsequent Dominion-provincial agreement on the respective responsibilities of the Division and the provinces in the collection, editing, compilation, and presentation of all types of health statistics.

The nature of the various types of health statistics is the intimate concern also of several semi-official and professional organizations in the health field. In some instances these associations represent the users of the statistics and wish to ensure that the published data are in such a form as can most conveniently be assimilated and translated into action by health administrators and health educators. In some instances the organizations are relied upon by the Division for medical and other technical guidance on matters outside the knowledge of the professional staff of the Division. A particular example of the latter group is the Medical Advisory Committee to the Dominion Statistician, a representative body which has the dual function of advising the Dominion Statistician on health statistics policy and of effecting liaison with the World Health Organization in the field of health statistics. The organizations with which the officers of the Division have most contact are the Dominion Council of Health, the Canadian Tuberculosis Association, the Canadian Hospital Council, the Canadian Public Health Association, and the Vital Statistics Council for Canada.

Vital Statistics Section

Before dealing with the organization and work of the Vital Statistics Section, a brief reference to the

historical background of vital statistics in Canada and the evolution of the present arrangements for dealing therewith, may be of interest.

The state of vital statistics in 1918 was summarized in the first annual report of the Dominion Statistician, as follows:

"Vital statistics, notwithstanding their importance as the basis of public health and of much of the security and moral tone of social life have never been satisfactorily organized for the whole of Canada. They are under provincial jurisdiction (as pertaining to civil rights); but in two of the provinces they have virtually never been brought into existence whilst in the others legislation and administrative methods have differed in the widest way. (For example, the statistical year is not uniform; the International Classification of Deaths is not universally followed; each province has its own standard of administration; and each province its own methods of compiling and presenting results). Inter-provincial comparisons of data or their combination into Dominion totals have accordingly heretofore been impossible".

Upon the establishment of the Bureau, vital statistics were one of the first subjects to receive attention. Two Dominion-Provincial Conferences on Vital Statistics were held in 1918, and a Model Vital Statistics Act adopted as a basis of Provincial Vital Statistics Legislation. An important feature of this bill was the provision for compulsory registration. Standard registration forms, to be supplied by the Dominion Bureau of Statistics, were to be used. Copies of the completed forms were to be forwarded to the Bureau for compilation of the national statistics and the main tabulations required by the provinces, thus ensuring uniformity. The provinces might make additional tabulations if they so desired. Additional Dominion-Provincial Conferences on Vital Statistics were held in 1943, 1944, and 1947. As a result of the 1944 Conference, the agreements with the provinces were revised and brought up-to-date and provision made for the establishment of a Vital Statistics Council, with representation from the provincial and federal vital statistics offices. In 1947, at the request of several of the provinces, the technical provisions of a new Model Vital Statistics Act were discussed at a conference attended by the Vital Statistics Council, representatives of the Conference of Commissioners on Uniformity of Legislation in Canada, and other interested agencies. Amended drafts were subsequently discussed by the Vital Statistics Council and the Conference of Commissioners on Uniformity of Legislation and a new Model Act was finally adopted by these bodies in 1950 and recommended for acceptance by the provinces as the basis of provincial vital statistics legislation. Most of the provinces have since incorporated the principles of the Model Act into their legislation.

The source documents from which the national vital statistics are compiled are the legal registrations of births, marriages, deaths, and stillbirths. The

registration of all these events is compulsory under provincial laws. The legal responsibility for registering a birth is placed upon one or both of the parents; for a death upon the nearest relative and the funeral director; and for a marriage upon the person conducting the marriage ceremony. Each province has one central office, located in the provincial capital, in which the records are permanently filed. They flow in to the provincial office from a network of local registrars who may be either employees of the Provincial Government, employees of a municipal government, or private persons especially appointed for the purpose.

Because of the provincial jurisdiction over registration, and of the provincial custody of the original records, these records are not available to the Dominion Bureau of Statistics. Instead, the records are photographed on microfilm in the provincial offices, and the microfilm is sent to the Bureau, usually weekly.

The transmission of the photographic copies of birth, marriage, death, and stillbirth registrations to the Bureau forms the main feature of formal agreements between the Bureau and each province. In effect, the agreements recognize the Bureau as the most appropriate agency for compilation of both national and provincial vital statistics. The Bureau undertakes to compile and publish vital statistics data for the country as a whole and to supply each province with the tabulations it requires. In addition, the Bureau supplies the blank registration forms to the provinces and pays a prescribed fee for each copy of a registration received. For their part, the provinces agree to forward copies of the registrations to the Bureau according to a stated schedule and also undertake to base their vital statistics legislation on a Model Act in the interest of national uniformity.

Under this division of responsibility the Federal Government has no direct dealings with the public in registration matters, and plays no direct part in the co-operative arrangements between a province and municipalities in securing registrations.

The fact that the source data for vital statistics are obtained as a by-product of the civil registration system eliminates the problem of obtaining the co-operation of the respondents who supply the information. Similarly, since the registration is itself an important legal document, it is closely checked at the provincial level for omissions or errors and these are usually corrected before the copy reaches the Bureau. With respect to the completeness of coverage, the information available suggests that registration of all types of vital events is close to 100 per cent.

In the process of compiling vital statistics a fairly close association is maintained with several other Divisions of the Bureau. In order to calculate the various vital statistics rates the Division requires population data annually from the Census Division. The descriptions of geographic areas, the definitions of occupation, citizenship, origin, etc., the classification of age-groupings, must all be com-

parable with those used in other Divisions and in particular with the decennial census since the vital statistics tabulations provide the basis for the intercensal population estimates which bridge the ten-year periods between successive censuses.

An equally close liaison is maintained between the Division and the provincial government departments responsible for vital statistics, to control the continuous flow of microfilm from the provinces and the return flow of tabulated statistics compiled in the Division. Moreover, while the agreements referred to above provide the formal foundation for the co-operative working arrangements needed to carry on a national vital statistics system in a federal state, a close connection is maintained at a technical level through the medium of the *Vital Statistics Council for Canada*, an organization composed of the officers actively in charge of the provincial and territorial vital statistics offices, the Directors of the Health and Welfare Division and the Census Division of the Bureau, with the Dominion Statistician as Chairman. The Council meets for several days annually for discussion of local, provincial, and national problems affecting both registration and statistics, and exerts a strong influence on uniformity of practice between provinces.

In certain cases the same type of liaison is necessary internationally. The usefulness of Canadian vital statistics is largely dependent on the extent to which Canada and the provinces can compare experience with other countries, and their ability to do so depends in turn upon uniformity of practice in terms, definitions, rates, coding procedures, classification and form of publication. Canada thus attaches considerable importance to the meticulous observance of international requirements and remains in close touch with current international developments. Often, the Division has a hand in initiating these developments, as in the preliminary work which led to the 1948 revision of the International Statistical Classification of Causes of Death. Another case in point arose in connection with the introduction of the International Classification in 1950. In collaboration with the United States and the United Kingdom, a set of rules of interpretation and guidance for coding causes of death was prepared, to maintain a high level of comparability between the mortality statistics of the three countries. These interpretations were found to be so useful that they were subsequently sponsored by the World Health Organization for the use of all countries.

The actual compilation of vital statistics in the Bureau is carried out by mechanical means through the use of punched cards. The rolls of microfilm received from the provinces are used as an actual working medium. They are set up on microfilm readers, and the various items of information on each registration are transcribed in numerical form to code sheets. The code sheets are passed on to key punch operators who produce the cards to be used in tabulation. As in the case of the other Divisions of the Bureau, the contents of the tables required are determined by the Division (in consultation with the provincial registrars), and the form and sequence of

the tabulations are decided by consultation between the Division and the Mechanical Tabulation Division. The tabulation program is arranged in such a way that the statistical tables required by the provinces are prepared in the process of working towards the national tabulations. The chief national publication is the *Vital Statistics of Canada* which is a comprehensive annual publication containing historical series, detailed cross-classifications for Canada and each province, and current figures of births, deaths, and marriages for local areas of 1,000 population and over. The annual report is supplemented by a monthly report presenting total figures for each type of event based on registrations filed in provincial offices, and by a quarterly report containing current data on infant, neonatal, maternal, and general mortality by cause of death.

The Vital Statistics Section operates basically as a service organization in the sense that the statistics are published for the most part in primary form. Although rates are computed and published there is little present involvement in any sort of intensive statistical research. Health administrators and other agencies using vital statistics material carry out further detailed analyses or interpretations which they may require and are often aided in doing so by the officers of the Division. In its regular publications, the Vital Statistics Section usually limits the analysis to pointing up the highlights of current trends and indicating any significant changes which have occurred.

Although the vital statistics mechanism is well established on a uniform basis throughout Canada there is still some room for improvement. One common criticism is the delay in publishing annual reports. The centralized collection, compilation, and printing, together with the burden of providing extensive provincial tabulations for such a large volume of events imposes a heavy annual load on the Division's resources and it is usually between 2 and 3 years before the report appears in printed form. However, the factors causing this delay are gradually being eliminated and it is expected that the annual publication will gradually be accelerated as a result. In particular, the tabulation program is currently under intensive examination with a view to eliminating some unnecessary tabulations and of postponing other detailed cross-classifications which are needed for administrative purposes but not for publication.

The Division's program of development also involves devoting more attention to the statistical analysis of selected aspects of the vital statistics including infant and maternal mortality, and deaths from cancer, cardiovascular renal conditions, and accidents. It is also hoped to place more emphasis on securing intercensal population data for smaller geographic areas to improve the accuracy of the annual rates for these areas.

The total staff engaged in carrying out these vital statistics functions varies from time to time but averages about 40 persons excluding mechanical tabulation. The staff is dispersed in four main units according to function rather than subject matter.

There is a Unit for the receipt and control of the microfilm, a Unit for coding non-medical particulars on the registrations, a Unit for coding cause of death and stillbirth, and a Unit for compiling and checking the final tabulations.

Public Health Section

The second main aspect of health statistics with which the Division is concerned is the measurement of illness in the general population and is the responsibility of the Public Health Statistics Section.

The two types of illness statistics involved are those which represent all illness in the whole population and those which are selective either for certain types of illness or for certain sections of the population. In attempting to obtain information on general illness, Canada is confronted with the same difficulties which have impeded the development of illness statistics in other countries — the tremendous volume, with the consequent heavy demand on the Division's resources, and the administrative difficulties involved in getting reliable information about every individual illness. The most practical approach to these problems is the use of survey methods on a sampling basis, and this is in fact the procedure which has been followed in a nation-wide Sickness Survey which was made in 1950-51.

Most of the resources of the Public Health Section in the past two years, and probably for the next two, have been committed to this Sickness Survey. Essentially the Survey represented the first attempt in Canada to secure statistical information which would be valid for the country as a whole and for individual provinces or groups of provinces on the volume of sickness, the volume of medical and nursing care, and the extent of family expenditures on all types of health care. A sample of approximately 10,000 households (about 40,000 persons) were visited once a month for a 12-month period by trained enumerators who recorded the detailed particulars of each illness which had occurred since the previous visit. At the end of the year the completed records were forwarded to the Public Health Section, together with information on the social, economic and environmental characteristics of the persons interviewed. These records are now being tabulated and the first results should be available in the spring of 1953.

The survey has been a joint enterprise of a number of different agencies throughout all its various stages. The initial planning was carried out in collaboration with the Department of National Health and Welfare and the Provincial Governments. The sample of households was drawn by the Sampling and Analysis Section of the Bureau. The enumerators were selected and paid by the Provincial Governments through federal health grants, and were trained in the field by the Bureau's Regional Office staff. Finally, the tabulation program was worked out in consultation with the Department of National Health and Welfare and the Bureau's Mechanical Tabulation Division.

The basic source document is the Individual Sickness Record for each person enumerated, showing the particulars of each illness experienced by that person during the year, including diagnosis, duration, days in bed at home and in hospital, the number of doctors' and nurses' calls and similar information. In addition there is a Household Card giving the household and family composition and characteristics and the environmental factors involved. Other auxiliary records are concerned with family expenditures for health services, permanent disabilities, and with unmet medical and nursing needs. The contents of the various records are tabulated through the use of punched cards and mechanical tabulation. The form of report in which the results will be published has not yet been finalized but it is expected that there will be a series of special reports issued over a span of several years.

As a valuable by-product of the survey, a great deal of very useful experience has been accumulated and documented on the techniques and methods used. There is a complete absence of any well-established definitions, terms, classifications and methods in the field of illness statistics, and it is hoped that the experience gained will be useful not only for any future surveys which may be undertaken in Canada, but to other countries as well.

This Survey is as far as Canada has gone in developing a system of general illness statistics. The future program may very well be one of expansion, featured by additional sample surveys, by refinements of method, and by gradual improvement in uniformity of definitions, terminology, and statistical presentation. The field is certainly broad and complicated but there is a growing recognition of the need for general illness statistics, as much for their social and economic implications as for their contribution to medical knowledge.

In contrast to statistics of general illness, certain types of selective illness statistics have been available for some years. Perhaps the best known are the statistics of communicable diseases. In Canada each province has its own law which requires that each case of a specified list of diseases must be reported at once to the provincial department of health. Each province compiles totals of the number of new cases of these diseases occurring each week, and sends a weekly report to the Public Health Section which then aggregates the provincial totals manually into a national weekly summary with comparative figures for the previous week and a five-year median. The weekly report is useful as part of the national epidemiological intelligence system by helping to indicate incipient epidemics in any part of the country, and the annual figures show the seasonal and yearly trends. The completeness of reporting is not known exactly but is thought to be a good deal less than 100 per cent, particularly for the less serious conditions such as measles and mumps. During the next year it is hoped that a program of improvement in reporting will be undertaken in collaboration with the Department of National Health and Welfare.

A second type of selective illness statistics compiled in the Public Health Section is a continuing

study of illness in the federal civil service in co-operation with the Civil Service Health Division of the Department of National Health and Welfare. The population of the civil service, which is about 100,000 in number, is not representative of the general population, nor in fact of the total working population. Despite the dissimilarity of overall sickness experience, the statistics are of administrative interest to industry and to the Civil Service Commission by showing the proportional incidence and duration of each type of illness for various employee groupings.

The source information is collected under the provisions of the leave regulations according to which each civil servant who is absent from duty by reason of illness for longer than a specified period must provide a physician's certificate in a prescribed form which states the diagnosis and the period of disability. The physician's certificate is checked by the medical staff of the Civil Service Health Division of the Department of National Health and Welfare and its contents are then tabulated mechanically in the usual way. The tabulated statistics are published in an annual report containing summary and detailed figures, a number of pictorial charts and a narrative analysis.

It must be recognized that the Civil Service illness statistics are undoubtedly influenced by the regulations governing sick leave, for example they exclude short-term illnesses for which physicians' certificates may not be required. Another difficulty is that of securing accurate information on the population at risk, so that at present it is not possible to calculate illness rates for the various age-sex groups. There is, however, some prospect that the population figures will be available in another year or two through the co-operation of the various departments of the federal public service.

The final type of selective illness statistics for which the Public Health Section is responsible is statistics of home nursing services rendered by the Victorian Order of Nurses which is a voluntary home nursing association whose services are available to about 35 per cent of the Canadian population. The basic data are recorded on a Patient's Service Record by the visiting nurse when each case is closed or at the end of the calendar year for continuing cases. The completed Service Records are forwarded from the local branch of the Order to the Ottawa headquarters and become available to the Bureau for mechanical tabulation by punched cards. Under the terms of the Bureau's agreement with the Victorian Order of Nurses, the Public Health Section supplies monthly and yearly tabulations showing the workload carried by each of the local branches and any other information required by the association. In return, the Bureau is provided, at very little cost, with a means of measuring the extent and characteristics of home-nursing services for a large section of the country. In addition, the morbidity statistics which are extracted from the same records have a special interest from the viewpoint of the relationship between chronic illness trends and the gradual ageing of the Canadian population.

The future program for further development of selective illness statistics will necessarily be correlated with the expansion of statistics of general illness. It is hoped that within the limits of the Section's resources it will be possible to extend the Bureau's inquiries into other similar areas of selective illness statistics such as insurance company records, school health records, industrial illness records and so on, from the double viewpoint of their value to the health workers in those particular fields and of their potential usefulness as indicators of total illness in the population.

The total staff of the Public Health Section at present numbers 19 persons, of whom 7 are professional and the remaining 12 clerical. In addition about 12 clerks are at present on strength on a casual basis in order to handle the extra load resulting from the Sickness Survey.

Institutions Section

The third aspect of health statistics is the concern of the Institutions Section, which is responsible for national statistics of hospitals, mental institutions, and tuberculosis sanatoria. This Section was set up in 1931 in response to repeated representations made over a period of years to the Federal Government by provincial authorities, medical associations, hospital and nurses associations, social welfare organizations, universities, and research workers in the field of the social sciences with respect to the need for more adequate statistics in this field. The Section sends out statistical reporting schedules each year to all types of hospitals and the completed schedules are either returned directly or are routed through the provincial department of health. Although different schedules are used for the three types of institution, all ask essentially the same type of information on ownership, capacity, facilities and services, medical and nursing education, personnel, movement of patients, and finances. In the case of mental and tuberculosis institutions the Section also receives an individual reporting card for each patient at the time of admission, discharge, transfer, or death. These individual cards are maintained as a perpetual inventory so that statistics of the characteristics, diagnoses, and durations of stay of the resident patients can be extracted at any given time.

As in vital statistics, the provinces have jurisdiction over the provision and maintenance of hospital services, and the collection system has accordingly been worked out in close co-operation with provincial departments of health. The present hospital schedules are in fact the outcome of a series of Dominion-Provincial Conferences and committee meetings and are designed to meet both provincial and federal requirements. Moreover, the provinces are invariably consulted before any change is made either in the reporting schedules or in the method of collection. The Section also maintains close liaison with such voluntary associations as the Canadian Hospital Council and the Canadian Tuberculosis Association. Many of the difficulties involved in

obtaining financial information on a uniform basis have been eliminated by the recent preparation of a standard accounting manual by the Canadian Hospital Council.

The extensive amount of detailed information on the schedules received from hospitals calls for a rigorous editing operation before any tabulations are commenced. In those cases where completed schedules are routed through the provincial health department on their way to the Bureau, the checking procedure at that point is extremely useful to the Section by clearing up a large proportion of the errors and discrepancies. When the schedules arrive in the Division they are closely checked against previous returns from the same hospital and against information which may be available from other sources. For example, the figures of revenue reported by hospitals as having been received from provinces or municipalities are checked against the returns made to the Bureau's Public Finance Division by the province or municipality.

The form of the statistical reporting schedule does not lend itself readily to punch card methods and up to the present the statistics have been compiled manually by using work sheets. This year, however, through the efforts of the Bureau's recently established Forms Control Section, the schedules have been re-designed in a manner which will not only facilitate completion of the forms by hospital staffs, but will also permit the compilation of their contents more quickly by peg-board methods. The individual cards received from mental and tuberculosis institutions are coded and punched for mechanical tabulation.

Two annual publications on hospitals are issued by the Section. One is a Directory of Canadian hospitals, listing for each hospital in the country the location, capacity, and services available. The second is an annual report which presents in statistical form all the information collected on the annual schedules.

Annual reports of mental institutions and of tuberculosis sanatoria are issued as separate publications and in addition to the statistics concerning the institutional operations also contain statistical tables on the diagnoses and characteristics of the patients treated, based on the individual reporting cards for these patients. Each report makes use of graphs and charts and contains an introductory analysis of the tabular data.

The short-term program of improvement for hospital statistics is aimed at increasing the uniformity of reporting, speeding up the dates of issuance of reports and introducing a number of changes in the contents of the annual publications. The long-term aim is the initiation of a system of hospital morbidity statistics for public hospitals through the use of individual reporting forms to be completed on discharge. This type of information on the causes of hospitalization would provide an extremely useful basis for planning future accommodation needs.

The Institutions Section has a staff of 13, distributed in a Hospitals Unit, a Tuberculosis Unit and a Mental Institutions Unit. Besides the Chief of the Section there are two professional officers, each having a specific responsibility for one phase of the work.

Judicial Statistics Section

Canada's criminal statistics have a long history. The collection of criminal statistics was provided for by Chapter 13 of the Statutes of 1876 and Canada has available a complete record of convictions for criminal offences extending over a period of more than 70 years. The Statistics Act of 1918 made specific provision for the furnishing of data relating to criminality to the Dominion Statistician by the courts, wardens, sheriffs, etc.

The Judicial Statistics Section is responsible for the national statistics on criminal offences, juvenile delinquency, police activities, and penal institutions. It receives its source data directly from the court officials and police officers concerned. Criminal offences in Canada are of two types—the more serious crimes, usually referred to as indictable offences, and the minor or non-indictable offences which include such breaches of the law as traffic violations. In the case of indictable offences an individual return is made listing the particulars of the crime, the characteristics of the offender, and the disposition of the case. For non-indictable offences an annual summary is completed by each court showing the total number of each category of offence during the year. Each court also reports the number of appeals heard, together with the number sustained and the number disallowed.

Reports on juvenile delinquency are received on individual forms, mostly from special juvenile or family courts, but also from magistrate courts in areas where no special courts have been established. The form lists the nature and circumstances of the offence, including the time of day or night when it was committed, and also inquires into the domestic circumstances of the boy or girl offender in an attempt to throw some light on the underlying causes of juvenile crime. For example, the form asks whether the child is living with his own parents and whether the father and mother are working. One of the main obstacles to complete reporting of juvenile delinquencies is the natural reluctance of many judges and magistrates to enter a child's name on court records when the case can be disposed of informally. It is hoped gradually to overcome this difficulty by emphasizing the confidential and statistical nature of the returns during personal visits to the courts by the Chief of the Section.

Returns of police activities are received once a year from municipal chiefs of police, from provincial police forces, and from the Royal Canadian Mounted Police who constitute the federal police force. The return lists the number of offences coming to notice, the number of prosecutions made, and the number and value of automobiles, bicycles, and other property stolen and recovered. The returns from

federal penitentiaries are on individual cards filled out by penitentiary officials at the time of admission or discharge.

The method of compilation varies according to the type of return. The annual schedules are aggregated manually on work sheets and the individual forms tabulated mechanically from Hollerith cards. For some years all types of judicial and criminal statistics were published together in one annual report, but recently they have been issued as separate reports on criminal, juvenile, and police statistics. The annual report of penitentiaries is prepared on behalf of the Federal Commissioner of Penitentiaries of the Department of Justice and is included in his annual report.

The scope and quality of judicial and criminal statistics in Canada are generally thought to be adequate for the purposes for which they are used, and any further progress will probably be in the direction of extending the field of interest into a wider area of welfare statistics.

Certain statistics on welfare services and social security programs are maintained separately by the government agencies which administer those programs,

but these have not as yet been drawn together into one comprehensive statistical picture on a national scale. It is hoped that eventually the present Judicial Section will expand into a Welfare Statistics Section which will continue to compile statistics of criminal activities, since these are in effect a manifestation of social circumstances and attitudes, but which will also undertake responsibility for compiling annual statistics on social security measures, welfare services, and welfare institutions.

In conclusion, it might be said that Health and Welfare Division feels that it is in a fairly good position to provide the basic statistical services expected of a centralized organization at the national level. The broad basis for future development already exists and the development itself will be proceeded with at a pace suited to the growing requirements for further statistical knowledge in this field. In the meantime, the Division's program for the immediate future is the closer integration of the several types of health and welfare statistics, their closer relationship with social and economic statistics, and gradual improvement in technique, quality, uniformity, and in the currency of publication.

DOMINION BUREAU OF STATISTICS
HEALTH AND WELFARE DIVISION

Chart showing function
and organization

Number, Periodicity and Nature of Reports

Report	Number	Periodicity	Contents
Vital Statistics Section:			
Vital Statistics	1	Annual	Detailed tabulations on residence basis, of births, still-births, marriages, and deaths (including infant, neo-natal and maternal mortality); cross-classifications and rates by age, sex, race, birthplace, cause, marital status, etc.; comparative and analytical data.
Vital Statistics	1	Annual	Preliminary release. General summaries of vital statistics by provinces; rates, causes of death, infant, neo-natal, and maternal mortality.
Vital Statistics	1	Quarterly	Same format and context as preliminary annual for quarter of occurrence.
Births, Marriages and Deaths	1	Monthly	Totals of registrations filed in provincial offices and cities, and cumulative totals, current and preceding year.
Divorces	1	Annual	Annual release of total divorce decrees granted, by provinces.
Public Health Section:			
Illness in the Civil Service	1	Annual	Statistical study of certified illness among some 100,000 federal civil servants throughout Canada.
Summary of Cases of Notifiable Diseases in Canada	1	Weekly	Summary of cases reported by provincial health departments, showing weekly trends and comparison with five-year median.
Institutions Section:			
Annual Report of Hospitals	1	Annual	Statistics in Public, Private, and Dominion Hospitals, number of beds, facilities, personnel, medical staff, movement of patients, and financial operations of public hospitals.
Directory of Hospitals	1	Biennial	Location, name, number of beds, personnel, available facilities and services, medical staffs, educational facilities for all Canadian hospitals.
List of Hospitals	1	Annual	List of hospitals, by type, showing location, bed capacity, ownership or control, schools of nursing, out-patient department and special units.
Preliminary Report of Hospitals	1	Annual	Preliminary to "Annual Report of Hospitals." A digest of general information, movement of patients, and financial operations for public hospitals only.
Annual Report of Mental Institutions	1	Annual	Number of beds, type of hospital, movement of patients, financial operations and personnel reported on annual schedules plus details of patients' characteristics such as diagnosis, age, sex, etc., which are reported on individual admission and separation cards.
Annual Report of Tuberculosis Institutions	1	Annual	Number of beds, services, financial operations which are reported on annual schedules plus details of patients' characteristics such as diagnosis, age, sex, etc., which are reported on individual admission and separation cards.
Quinquennial Census of Charitable and Benevolent Institutions	1	Quinquennial	Statistics on charitable and benevolent institutions, number of institutions, personnel, characteristics of inmates, and financial operations.

Number, Periodicity and Nature of Reports – Concluded

Report	Number	Periodicity	Contents
Judicial Section:			
Statistics of Criminal and Other Offences	1	Annual	Adults charged and found guilty of indictable crimes by judicial districts and provinces showing sentences, age groups, sex, birthplace, origin, residence, religion, occupation, marital status, education, court proceedings, appeals, pardons, and executions. Convictions of indictable crimes and non-indictable offences. Penal institution and training school statistics. Police statistics. Historical Appendix.
Juvenile Delinquents	1	Annual	Number of boys and girls brought to court, dismissed and delinquent by nature of delinquency, previous delinquencies, disposition of cases, source of complaint, court, month of hearing. Juvenile delinquents by age, sex, birthplace, residence, occupation, education, religion, parents' occupation, birthplace, and marital status. Historical Appendix.
Police Statistics	1	Annual	Police statistics of cities, towns and villages of 4,000 population or more and statistics of Ontario Provincial Police, the Royal Canadian Mounted Police, and Railway Police.
Special and Analytical Reports:			
Health Reference Book	2	First published 1946, revised 1948	Review of health services, federal and provincial programs, health statistical background material.
Survey of Pension and Welfare Plans in Industry	1	Published in 1950	Coverage and characteristics of employee pension, life insurance, and sickness benefit plans in Canadian industry and business. Description of various types of employee pension plans in Canadian industry.
Employee Group Life Insurance and Sickness Benefit Plans	1	Published in 1950	Description of various types of employee group life insurance and sickness benefit plans.
Employee Pension and Retirement Plans	1	Published in 1949	Description of various types of employee pension plans in Canadian industry.
Physicians Pocket Reference	4	Published 1920, 1931, 1942, 1950	Index to International List of Causes of Death, designed to assist physicians in certifying causes of death.
Vital Statistics Handbook	2	Published 1937 and 1947	Summary of principles of registration, collection, compilation and analysis of Vital Statistics; definitions, etc. Includes International List of Causes of Death.
Cancer Mortality in Canada and the Provinces, 1921-44	1	Published 1947	Analytical study; rates (crude, adjusted, and age-sex-specific) by sex, age, site.
Life Tables, 1931-41, 1945, 1947	3	Published in 1947, 1948 and 1949 respectively	Conventional life table terms; Life tables for 1931-41 for Canada and 5 regions; 1945 and 1947, Canada only.
Maternal, Infant and Neo-natal Mortality, 1926-40	1	Published 1945	Analytical study with charts; mortality and rates by age, cause, etc.
Dissolutions of Marriage (Divorce)	1	Published 1943	Summary analytical report; divorces and rates 1920-43, by marital status, re-marriages of divorcees, etc.
Violent Deaths, 1943	1	Published 1945	Analytical report by province, sex, age, cause, place of accident, occupation, month, etc.
Summary of Vital Statistics	1	Annual	Reprint from Canada Year Book; significant historical vital statistics data, rates, charts, etc.

DOMINION BUREAU OF STATISTICS

INDUSTRY AND MERCHANDISING DIVISION

The Industry and Merchandising Division encompasses two major fields of activity; Industry (comprising forestry, fisheries, mining, and manufacturing) and Merchandising and Services. Although the two fields are for the most part structurally separate, relationships are sufficiently close to require careful co-ordination. For example, there are the numerous cases where manufacturers operate their own retail and wholesale outlets. In a sense almost all manufacturers carry on wholesaling or retailing to some degree. There are also many cases where wholesalers or retailers carry on manufacturing processes on the premises.

In the following description, attention is first paid to the Industry field and then to the Merchandising and Services field. Concluding paragraphs on "Research and Development" and "Uses" refer to both.

The Census of Industry

The first Canadian statistics of production, apart from data collected by the decennial censuses were those of such federal and provincial departments as had administrative functions in different sections of this varied field. The applicability of such statistics to other than their immediate purpose was limited, overlapping was prevalent, there were gaps at crucial points, and there was no attempt to cover the general economic background. The Statistics Act of 1918 (Sections 20 and 21) provided for a comprehensive Census of Industry by the Dominion Bureau of Statistics and this was subsequently placed on an annual basis.

The organization of a comprehensive scheme of industrial statistics involves an extremely wide range of activities. The Bureau's aim has been to develop consistently defined and directly relatable data on gross value of production, employment, pay-rolls, cost of fuel and electricity, and cost of materials and supplies, collected annually. Some idea of the diversity of items to be taken into account, as well as the mass of data made available by the Industrial Census may be gained from a count of non-duplicating commodity items on the various schedules, which shows that approximately 3,000 materials and 5,000 products questions are asked.

Since an annual census bears heavily upon small manufacturers with limited accounting records, total coverage is maintained chiefly in terms of gross value. Establishments whose normal annual production has a value of less than \$50,000 are asked to report a single total value figure unless they produce significant percentages of specific commodities in which case they are asked to report detail of such commodities.

While the annual census provides a wealth of integrated statistics, current information on the production of important commodities or strategic materials may be of primary importance. Hence a considerable number of surveys have been developed on a monthly, quarterly, or seasonal basis. Although the number of commodities so treated is small in comparison with the coverage of the annual census, the commodities for which current data are collected are, in many cases, treated as fields in themselves and very detailed breakdowns are obtained including information on stocks. A count of non-duplicating items on schedules used in current surveys shows that well over 1,000 significant totals result from their collection and compilation.

The Bureau's organization for the work of the Census of Industry consists of six Sections: Animal Products; Commodity; Fisheries; Forestry; General Manufactures; Mining, Metallurgical and Chemical. In addition, there is a Central Index Unit which services all the Sections. A brief description of the function and organization of each Section is given below. Since the methods of collection of basic data, follow-up, compilation, etc., are basically the same for all Sections, these will be discussed for the Industrial Census as a whole rather than Section by Section.

Animal Products Section

This Section compiles annual statistics of dairy factories, processed cheese, oils and fats, fur goods, fur dressing, slaughtering and meat packing, tanning, and leather products such as footwear, gloves, and miscellaneous leather products.

Monthly statistics are published on production and stocks of margarine, shortening, salad and cooking oils, animal oils and fats, processed cheese, leather footwear, finished leather, and stocks of raw hides and skins.

This Section integrates its collections of dairy products statistics with the Agriculture Division of the Bureau, the needs of the various provincial dairy commissioners and the Quebec Bureau of Statistics. Co-operation is received in the maintenance of up-to-date mailing lists, revision of schedules, and the assistance of field officers.

Commodity Section

This Section is concerned with (a) the collection of value data on inventories, sales and orders, most specifically for the National Income Section but, in the case of orders, as an experiment in the production of forecasting data, and (b) research and development of industry statistics, with particular regard

to improvement in quality and timeliness of commodity statistics, and of the gross value and value added concepts.

It collects values of year-end inventories and calendar year sales annually, covering all firms over \$50,000 gross, including not only manufacturing but also mining and, to some extent, logging. Similar data are collected and published monthly from a large-firm sample with the addition of questions on total orders on books, and binding orders.

The Section is charged with the estimates for small establishments, required to complete the regular Annual Census of Industry Survey, and is closely concerned with the early estimates for the annual *Preliminary Statement of Manufactures*.

The senior staff of the Section serve on committees concerned with concepts as a regular part of their duties and are required to prepare experimental data in support of overall developmental patterns, such as input-output studies, in so far as they affect the Division. It maintains close work-level liaison with the Integrating Unit of the General Manufactures Section.

Fisheries Section

The fishing industry is covered in two parts: (a) the primary industry of catching fish, including a record of vessels, gear, employees, etc., and (b) the factory operations of fish canning and curing. The work is carried out in co-operation with the Dominion Department of Fisheries whose field officers collect a large part of the data except in the case of inland waters where arrangements exist with the Provincial Governments concerned.

The publications of this Section consist of an annual report of fisheries; a monthly report on production, stocks, and foreign trade of fresh and frozen fish; and a monthly bulletin on the freezings and inventories of fish.

As part of the Ninth Decennial Census, a sample census of the primary fishing industry is now in progress. This will obtain detailed information on fishing gear and shore equipment, the catch and its disposition, annual expenses, etc.

Forestry Section

This Section collects and publishes statistics relating to operations in the woods, the primary industries based on these operations such as lumbering and pulp and paper, and the secondary industries using wood and paper as their principal raw materials. Some provincial forestry services provide lists of saw mills and assist in the collection of returns. Close co-operation is maintained with the Federal Department of Resources and Development.

The publications of this Section include a comprehensive annual estimate of forest production (operations in the woods), and separate annual reports on the lumber industry, the pulp and paper industry, several wood-using, and paper-using industries, and the printing trades.

Monthly figures are published on production, shipments, and stocks of lumber; on production and domestic sales of rigid insulating board, asphalt roofing, and asphalt floor tiles. Monthly statistics are available, but not published, for pulpwood, peeler logs, veneers and plywoods, wood shingles, sawn railway ties, and wood lath.

General Manufactures Section

This Section is concerned with the annual census covering the fields of foods and beverages, primary textiles, clothing, tobacco and tobacco products, rubber products, and miscellaneous industries not assigned elsewhere. It also acts as the industry statistics integrating unit, in the sense that it is responsible for all compilations treating manufacturing as a whole, and for all publications and textual analysis at this level.

Currently, in the field of manufactured tobacco, data with respect to stocks, consumption, etc., are collected on a quarterly basis. The commodity officer in charge is a member of the Tobacco Committee of the Department of Agriculture. Similarly, a seasonal survey of completed packs of fruits and vegetables, and a quarterly survey of stocks of canned fruits and vegetables are adapted to needs of the same Department and, in return, assistance is received in the form of lists of establishments, collection service in the field, and revision of schedules.

Quarterly data are collected on the production of a considerable number of important processed food items and items of men's, women's, and children's clothing. Monthly surveys cover shipments (by province of destination) of prepared stock and poultry feeds; and stocks, consumption, etc., of rubber, crude, reclaim, and synthetic.

Data on the production of manufactured tobacco, new spirits, and beer, and on the consumption of grains in the brewing industry are compiled from the records of the Excise Check Branch of the Department of National Revenue.

Mining, Metallurgical, and Chemical Section

This Section is concerned, first, with the collection and publication of statistics of the mining industry, and second, with the collection and publication of statistics of those manufacturing industries which use metal and mineral products as their chief raw material; these industries being in seven major groups—iron and steel products, transportation equipment, non-ferrous metal products, electrical apparatus, non-metallic mineral products, products of petroleum and coal, and chemical and allied products. Co-operation is maintained with the mines departments of the various provinces and joint schedules printed by the Bureau are used to avoid duplication of inquiry. There is also close liaison with the Federal Department of Mines and Technical Surveys.

A preliminary estimate of the mineral production of the preceding year is published on January 2, and later, as compilations are completed, reports are

published on each major mining industry, such as the gold mining industry, the asbestos mining industry, etc. Monthly bulletins are issued on the production of Canada's leading minerals and mineral products.

Statistics of the seven major groups comprising those manufacturing industries whose chief raw materials are metal and mineral products are published in a series of industry reports such as the motor vehicles industry, the agricultural implements industry, etc. In addition, monthly bulletins are issued on a number of major commodities such as motor vehicles, pig iron, steel, refined petroleum products, radio receiving sets, washing machines, etc.

Central Index Unit

This Unit maintains an alphabetical card index of all manufacturing establishments, and a geographical index, with establishments grouped alphabetically by locality.

The maintenance of up-to-date lists and the supply of information regarding new establishments to other Sections (and other Divisions, notably Labour and Prices) require a complete file of city and telephone directories, business directories, etc., and a mail follow-up in certain cases.

Since the Unit has available not only its own lists, but also a library of directories, it prepares special lists and answers inquiries which, in many instances, service other government departments.

In addition, the Unit centralizes correspondence files for the Division. The Unit is an extension of the Director's secretariat and operates without a senior head.

Methods of Collecting the Basic Data

Lists of manufacturing establishments have been built up from various sources such as Dun and Bradstreet, unemployment insurance records, reports from Boards of Trade, classified advertisements in city and telephone directories, trade magazines, financial publications, etc., and are kept up-to-date by checking the latest information from these sources. When sufficient information on type of product to enable a correct industry classification to be made is not obtainable from the above sources, more information is sought by correspondence with the firm or individual concerned. This is done in co-operation with the General Assignments Division since the latter requires extremely up-to-date listings for its Capital Forecast Survey.

For the annual census, with a few exceptions, a separate schedule is used for each industry. Page 1 which asks for information on employment, payrolls, and cost of fuel and electricity used is standard for all schedules but the pages following itemize the appropriate materials and products in each case.

The "general schedule" described above is replaced by a "short form" in the case of establish-

ments whose normal annual production has a value of less than \$50,000. These are asked to report gross value only unless they produce important percentages of specific commodities in which case they are asked to report detail of such commodities. It is planned to ask for additional detail from small firms on a quinquennial basis in order that their importance in particular items may be reassessed. All newly established firms are asked to report for one year on the general schedule so that the size and nature of their business may be known. If small, they are sent the short form in succeeding years.

All schedules are reviewed each year in the light of the requirements of other interested Divisions of the Bureau, other government departments, and industry. Also taken into account are the changing commodity patterns evident in the individual completed schedules for previous years, where the "write-ins" or too large "remainders" show that detail is out of date. Each Section is directly responsible for the itemization of the products and materials sections in the industry fields assigned to it. Arrangements in connection with the printing of schedules is centralized in the Director's secretariat.

The main items or "principal statistics" of the annual census of industry are established on concepts which must be uniformly applied (see note on Concepts). These are subject to discussion by a committee composed of the Chiefs of Sections and the Director as chairman and agreement must be reached before any change is made.

Both the annual census and the current surveys are by mail. The annual census of industry schedules are mailed early each year to collect data for the previous year. The addressing of schedules, envelopes, etc., is, as a rule, done by the Addressograph Unit of the Office Services Section.

It is required that each Section mail at one time all schedules to be completed by a multiple establishment firm whose operations lie completely within the Section's field. In cases where the operation of such firms necessitate reports to two or more Sections, the mailing of schedules and follow-ups is centralized in the Director's secretariat.

Methods of Obtaining the Co-operation of Respondents

Because business firms find the census of industry statistics of such practical use, they are, as a rule, willing to co-operate in supplying the details for their own businesses which help to build up the general picture. They find the published statistics helpful in assessing output, sales, etc. against the background of related industry, province, and kind of business trends; for calculating their share of the market; for assessing the effect of advertising programs; as a guide to the location of new plants, production of new lines of goods; and so on. In addition to published reports, an effort is made to supply particular information requested by manufacturers, even though this may involve the preparation of special tables, research, etc. The volume of such work is considerable.

An important factor in obtaining the co-operation of respondents is their confidence that the secrecy provisions of the Statistics Act will be strictly adhered to. The Act states specifically that no individual return shall be published or divulged and that no report, summary of statistics, or other publication shall reveal individual particulars. In order to ensure secrecy the rule is that at least three firms must report an individual item before information can be released; furthermore even if three firms do report the item, if one of them is responsible for a large percentage so that its operations might be revealed, information for the item cannot be released.

Methods of Follow-up, Editing, and Compilation

Tardy respondents are followed up by mail at regular intervals. In the wording of the form letters used and the time periods between mailing a standard practice is followed by all Sections.

About May 1, each year, a list of the remaining delinquents, along with duplicate schedules, is sent to the Regional Offices of the Bureau. In order that neither the Regional Office nor the firms will be burdened with unnecessary work, the schedules for delinquents are mailed to the Regional Offices in dockets which are first circulated through all the Sections in order that the docket for a particular firm may contain all the schedules for which a particular firm is delinquent. Increasing pressure by letter, telegram, telephone, or personal call is then brought to bear on the delinquent by the Regional Office.

When the incoming schedules are received in the Bureau they are checked off on a master list of firms after which they pass to the senior officers of the Section. Following this preliminary inspection the schedules are transferred to the senior editing clerks in charge of the major industrial groups who make a careful check for omissions, a comptometer check of all additions, a comparison with the firm's report for the previous year to see that all entries appear to be reasonable, a check of unit prices of products and materials used, etc.

Errors, questionable entries, or omissions discovered in this detailed edit of each individual item often require extensive correspondence. When a report is considered final, the "principal statistics" (employment, payrolls, cost of fuel and electricity, total cost of materials and supplies and gross value of production) are entered on a 5" x 8" record card which carries the history of the establishment for a number of years. Totals are compiled by adding machine from the schedules submitted by the reporting establishments, by industry and by province, in the Bureau's Mechanical Tabulation Division.

Since firms with an annual gross value of production of less than \$50,000 are not required to report detail, the editing and compiling procedures referred to apply only to the schedules received from large firms. The small firm schedules are edited only to the extent that the gross value reported is checked against the previous year. From this point on the procedure is to enter the gross value on the 5" x 8" card in each case and to complete the prin-

cipal statistics for entry on the card by estimation. When all cards are so completed they are compiled by industries, with provincial sub-totals. The principal statistics thus arrived at are final, and the detail of products, etc., estimated by trend factors applied to a base year in which small firms did report detail, must be adjusted to fit into the principal statistics. In special instances, where adequate current commodity data are collected, the sum of the reports submitted during the year by firms classed as small is used, rather than estimates from the base year.

In the case of bread and other bakery products, a one-in-ten sample of detail of small firms, together with the single gross value figure from all others, provides a different estimation approach.

Following the preparation of the provincial estimates of small establishments for each industry, these provincial data are incorporated with the provincial "top sheets" resulting from the actual addition of the schedules submitted by the larger firms, and complete totals are prepared up to the Canada level.

The Canada and provincial totals are the control sheets for all industries and are further used to prepare all-industry tabulations. After completion, the individual industry totals are transferred from the Sections to the Integrating Unit. By hand posting, principal statistics are brought together by major industry groups, by provinces, and for Canada as a whole. The detail of the items of each of the principal statistics, other than materials and products, is treated similarly.

The detail of commodities is assembled from the industry control sheets by means of a cardex which brings together the "parts", although in terms of total production there is often a small percentage of non-assignable, "all other". When the assembling is completed, an alphabetical list of products is prepared giving total quantity, whenever possible, and total value in all cases of some 3,000 items produced.

Obviously the detail of materials used is more difficult to assemble. Nevertheless, a similar cardex is maintained for many important materials. Even where the consumption so brought together does not represent the total, the cardex does make easily accessible the existing limited knowledge.

While the hand posting of Canada and provincial industry control sheets yields the data required for most purposes, specific cross-analysis requires the regrouping of material below the provincial total level. The 5" x 8" record card maintained for each establishment bears summary principal statistics, together with information on "type of ownership", suitable for transfer to Hollerith punch cards. Therefore, the Integrating Unit prepares a complete deck of punch cards covering all establishments, and this deck can be sorted to produce runs of summary statistics by type of organization, size of establishment, geographical location, etc.

It should be noted that the full detail of annual data collected on dairy products is compiled by counties or their equivalents for each province, owing to the need of agricultural statisticians for regional information.

The time-lag inherent in a detailed historical series is overcome, to a considerable extent, by the preparation of advance estimates. Even though many establishments may be delinquent in reporting, preventing the closing of industry compilations, the completed annual schedules received during the first half of the succeeding year cover the total, or almost total, production of a large number of commodities, and represent a high percentage of industry gross value. During the month of September each year, therefore, the Director requires that all Sections give priority to the compilation of 1,000 significant items of production from schedules to hand, supplemented by estimates where necessary. At the same time, rapid additions of principal statistics are made, and where coverage is lacking, expansion factors are used to estimate industry totals. By this means, useful and reasonably accurate industry and commodity data are prepared and released, preceding the more detailed final publications of the Division. (Compilations are made by the Mechanical Tabulation Division, in so far as possible, in a manner permitting their later use in preparing final totals).

Other annual surveys, such as those covering manufacturers' inventories and sales, and the primary fields of fishing and mining, follow standard collection and compilation patterns. The annual statistics of logging, or operations in the woods, however, cannot be collected from producers and compiled in the usual manner. There are tens of thousands of farmers engaged in such work as well as many logging firms and individuals who do not operate regularly at the same location from year to year. Hence this survey is on a sample basis only. This survey is used in conjunction with an independent estimate of production (based on consumption and export statistics) to provide estimates of employment earnings and supplies used in the industry. Consumption data are available from the materials used sections of a number of wood-using industries, and from available statements and returns covering the activities of railways, telephone, telegraph and power transmission companies, and mines. Other specific items of production, e.g., fuelwood, are included by more speculative methods.

In current series, which deal for the most part with commodity production, the Section concerned with the industry or industries producing the major part of the commodities is responsible for an entire survey. An extreme example is the quarterly survey of stocks of canned fruits and vegetables, where the appropriate Census of Industry Section includes in the survey stocks of manufacturers, wholesalers, and chain stores, thus invading the merchandising fields to secure meaningful coverage. This approach brings to the commodity problem the special knowledge which can exist only in the Section vitally concerned. The integration here, therefore, is through a specific commodity officer. In connection with the

current surveys, the Director functions at the policy level, acting as chairman of the discussion groups made up of government officials, representatives of industry, etc., which usually precede the establishment of a survey. It is his recommendation, eventually, which brings it into being.

In general, all the current surveys follow procedures similar to those used in the regular annual surveys, but there are differences in compilation methods. A few current series are ledgerized. In two instances, the monthly surveys of volume of shipments of prepared stock and poultry feeds; and the values of shipments, inventories and orders of all manufacturing industries, they are on a large-firm sample basis. In both series index numbers are computed and are used to project total data available from annual surveys.

Integration with Work of Other Bureau Divisions

As already stated all schedules are reviewed each year in the light of the requirements of other interested Divisions of the Bureau, other government departments, industrial associations, and large industrial concerns.

The Research and Development Division makes extensive use of statistics produced by this Division in preparing estimates of national income, gross national product, and gross national expenditure. Industry payrolls are an important component of national income. Value added in industry is used as a check against independently derived distributions of national income by industry. Investment in inventories by industry is a component of gross national expenditure. A monthly survey of the value of industrial inventories and an annual survey of the same field with a coverage of approximately 97 per cent have been developed. The monthly survey also yields data on value of shipments, total orders on books, and amount of work still to be done on existing binding orders, experimental current data which pertain to industry rather than commodity, and which are designed for overall studies and for forecasting. Data on commodity production and retail sales are used in computing estimates of personal expenditures and investment expenditures; they are also important components of gross national expenditure. Retail operating cost surveys are used to obtain estimates of net income of unincorporated retailers.

Data on industry production and consumption and value added are the bases for the calculation of the index of industrial production by the Business Statistics Section. This Section also uses all available current commodity data in the construction of its monthly indexes of industrial activity.

Data on industry production are used by the Labour and Prices Division in determining the weighting pattern for the index of wholesale prices.

The Agriculture Division uses the data on industry consumption of agricultural products as a basis for estimating farm production and income in some cases, and in accounting for the disappearance or use of farm produce.

Statistical Gaps, Appraisal of Quality, and Program for Improvement

There is an increasing demand for timely industry statistics. Current commodity series, while serving specific needs, do not contain indications of their relationships to one another, nor to the total industrial universe. For example, an existing monthly series on the consumption of rubber contains such measures as present consumption compared with the previous month, etc. It does not indicate whether, in the rubber industry, the importance of rubber as a material may be declining due, say, to the increasing use of plastics, nor that the volume or value of production by the rubber industry has increased or decreased in relation to total production by all industries. Industry surveys, however, provide statements about parts, i.e., industries which are measurable against each other and against the total, and against which commodity series can be observed with added meaning.

An important advance in timeliness, at present in the approval stage, will be the enlargement of the annual report, *The Preliminary Statement of Manufactures*, which releases the early estimates of principal statistics, and of 1,000 commodities produced, to include sales estimates for the first six months of the current year also, together with indexes of orders on manufacturers' books as at the end of the half year. These additional data will be shown by main groups, with detail of significant individual industries where possible, and, in the case of sales, will be derived from the monthly sales sample and the calendar-year sales survey for the previous year.

More experimental, and designed only for special users, is an overall estimate of gross value, with a limited industry breakdown, to be made available at, or about, the end of the first quarter of the year succeeding. Such an estimate was made in April, 1952, to cover 1951, using payrolls, together with annual sales schedules available at that time. A useful statement showing major industrial groups, major economic groups, and approximately 70 individual industries was thus made available to users whose studies require the piecing together of even more fragmentary, or speculative monthly data, and to whom a relatively rough check through annual estimates, if made soon after the end of the year, has more value than complete data with a considerable time-lag. This attempt will be continued and will be supplemented by early runs of principal statistics from annual Census of Industry schedules, where possible, since such runs can indicate important current deviations in the relationship of items of principal statistics, the detection of such deviations being often the prime purpose of the studies.

Indeed, the main problems of early data, both of principal statistics and significant commodity production, could probably be solved by the selection of several thousand large establishments whose reports would be secured early each year. Immediate checking and compiling of such reports would provide basic estimating material, and the compilations

would be final for those establishments. Later collections and compilations would simply represent additions to be made to the first compilation.

Improvement in details of materials and products will be advanced by (a) adoption of a Standard Classification of Commodities, at present in preparation, (b) the completion of input work tables leading toward the use of annual Census of Industry data in input-output studies, and (c) the adoption of a new type schedule discussed below.

A further problem is the lack of data *re* the physical content of industrial inventories, now collected chiefly in values only. Such data are urgently needed for revaluation studies.

Also required are special studies and occasional surveys to establish statistically the normal consumption channels of all strategic materials. Areas requiring special surveys will be illuminated by the input studies referred to previously.

A Major Conversion Program.—The Census of Industry is at present converting from a Gross Value of Production to a Gross Value of Shipments approach in its annual survey. This is, to some extent, for the convenience of the majority of reporting establishments since, for them, shipments are sales and sales approximate production. They will, therefore, be able to report easily available data, and the survey will continue to provide accurate information on the real production of goods and real movement of goods. Where shipments and sales are not the same, e.g., where transfers are made to other units of the same firm, the total commodity movement from the establishment will be requested. Where shipments and production do not agree, e.g., in industries normally holding a considerable percentage of annual production in inventory, the products section of the schedule will have a column asking for quantity only of items actually made, as well as the usual two columns asking for quantities and values of items shipped. This extra production column device will also be used in industries producing intermediate process products partly or wholly consumed by the reporting establishment, and should help to solve the problem of securing knowledge of total production of such items.

A study is now being made to determine whether or not the Industrial Census can be further converted in that page 1 of each schedule will eventually bear a block of financial-type principal statistics questions. These questions will cover the total activities of the establishment, and the shipments question will break down into something approximating (a) shipments of own products, (b) all other shipments, (c) amount received for custom or commission work, (d) value of transfers of own products, and (e) all other transfers. These breakdowns, together with appropriate data under materials, etc., will permit the calculation of a value added by purely industrial operations as well as a value added by total activities. They will also yield several gross value universes, by different combinations of the shipments items, each new universe useful in connection with the nature of value data available

currently, the definition of the "activities of the establishment" and of "gross value" acceptable to the United Nations, etc. Since inventory-change data are available, adjustments to shipments totals to bring them into line with production needs can be made in total, as well as by the special production column referred to previously. The specific questions to be asked, and the exact nature of data desired, are still under discussion.

Publications

A separate report is published for each industry. Each annual report is paged by letter and number as part of a total printing pattern in which individual reports can later be brought together by industry groups, etc., in order to prevent duplication of preparation and printing costs.

Each individual industry annual report carries a brief résumé and a number of tables generally conforming to the following broad pattern:

1. Principal statistics for the current year and a few previous years.
2. Principal statistics by provinces for the current and last year.
3. Quantity and selling value of the individual products of the industry for the current and last year.
4. Quantity and cost of materials used in the industry for the current and last year.
5. Total production or factory shipments figures (quantity and value) of individual products classifiable under the industry irrespective of whether they were produced in the industry itself or in some other industry for the current year and a few preceding years.
6. Imported quantity and value of the products classifiable under the industry irrespective of whether they are actually being produced or not, for the current and last year.
7. Exported quantity and value of individual products classifiable under the industry for the current and last year.
8. List of firms reporting for the industry.

In addition, to these individual industry reports and general reviews for each major group, there are all-industry annuals, resulting from the work of the Integrating Unit, and a considerable number of current releases. (See publications of the Industry and Merchandising Division).

Note on Statistical Concepts

Classification

An industrial survey presupposes the grouping of establishments into recognizable divisions of the industrial economy, defined as industries. Establishments are classified to industries by the basic nature of their operations or their major activities. This means that an establishment with diverse operations carries into a specific industry minor operations which properly belong in a totally different industry. Nevertheless, the data are sufficiently homogeneous in nature to permit the study of rela-

tionships between the individual statistical items, and they do establish channels within which historical series may move.

In the classification now used, there are about 171 industries or classes capable of being brought together into 17 major groups such as food and beverages, clothing, transportation equipment, electrical apparatus and supplies, etc. Wherever industry divisions do not coincide with the International Standard Classification, the set-up is such that agreement can be achieved by re-grouping totals without the necessity of re-compiling data.

Gross Value of Production

This is the sum of the values placed on the production during the year of the quantities of all products made to the extent that such products were shipped from the establishment, or carried in inventory at the end of the year with the intention of shipping. The values requested are selling values, f.o.b. the establishment, not including sales tax or other excise taxes and duties. Where shipments are not sales, but are transfers from one unit to another of the same firm, values recorded in the firm's accounts are accepted.

Production is understood to refer to products made from own materials, either in the establishment reporting, or manufactured for it elsewhere from its own materials on a commission basis. There are exceptional cases in which commodities produced on a commission basis are credited to the processing establishments, notably those where materials are owned outside the industrial universe and those where a particular geographical emphasis is desired.

Owing to the practice of classifying an establishment by its major items of production, the products section of each industry schedule must provide for the minor items also even though these are not basic to the industry. The general situation may be illustrated by reference to structural steel shapes (erected) which are reported almost entirely by the bridge and structural steel industry, but appear in small fractions of the total, in the miscellaneous iron and steel, the sheet metal products, and the boilers, tanks and plate work industries.

In the majority of cases, products are manufactured for shipment out of the establishment, and the cross-addition of fractions reported separately gives total production. However, where any product partakes of the nature of an "intermediate process" as far as the particular establishment report is concerned, and is partly or wholly consumed by that establishment in further manufacturing, only the fraction shipped, if any, can be specified and the remainder is lost. In this case, cross-addition cannot give the total production. Some of these items are extremely significant, and total production data must be secured. In many such instances, special commodity and supplementary sections are added to the schedule to obtain the required information. These supplementary data do not enter into the gross value addition.

Cost of Materials and Supplies Used

This is defined as the laid-down cost at the establishment of materials and process supplies used in manufacturing the products whose values have been added together to arrive at gross value. The detail of materials used, when compiled for an industry, is directly useful when related to the compilation of products for the same industry. Cross-adding of fractions, or parts, from one industry to another, however, is more difficult than for products. For example, many materials specified by reporting firms appear to be additive but are, in reality, at different stages of processing. As in the case of products made, intermediate process products are a problem, since to include consumption of such in the establishment would duplicate values of raw materials.

Net Value of Production

Since products made for shipment by any establishment frequently become the materials of another manufacturing establishment, aggregates of gross value of production and of cost of materials and supplies used are always overstatements in terms of real production and real consumption of materials. The net value of production, or the value added by manufacturing is the statistic most closely approximating the value created by the activities of the establishment. It is calculated for any kind of aggregate by subtracting from the gross value of production of the establishments being dealt with, their expenditures on fuel, electricity, materials, and manufacturing supplies. In this calculation, duplications resulting from inter-industry shipments cancel, and even the original cost of materials, etc., at the point of entry into the domestic manufacturing universe are removed.

Merchandising and Services Section

The first attempt to carry out a complete survey of distribution in Canada was made in 1924, from listings prepared in connection with the 1921 Census of Population. This survey was, for various reasons, processed to a limited extent only, and the first comprehensive survey of distribution and retail services was made in 1930-31. A similar survey was made in 1941 and again in 1951. Besides making available a complete picture of the operation of the distribution and services trades, the census provides the background necessary for the continuing annual and monthly surveys which form the bulk of the intercensal work of the Section.

Scope of the Census of Distribution

The Census of Distribution includes in its scope all places of business engaged chiefly in carrying on retail or wholesale trade and, in addition, certain types of establishments whose revenue is derived from the providing of services rather than from the sale of merchandise. Retail merchandise establishments are taken to include not only retail stores as generally considered,

but also such types of business as gasoline filling stations, coal and wood yards, retail lumber yards, restaurants, and similar establishments in which consumers' goods are sold primarily at retail. Retail sales made by line elevator companies, co-operative marketing or purchasing associations, hotels, wholesale merchants, and itinerant operators without an established place of business are also included in the survey. Such types of business are not included in the regular tabulations but are included in the estimates of total sales through all outlets.

The wholesale section of the Census includes a wide variety of types of business acting as intermediaries in the field of distribution. It includes not only wholesale merchants who buy in bulk from the producer and sell in smaller lots to the retail trade but also such types as agents, brokers, commission merchants, bulk tank stations of petroleum refiners or distributors, and the various types of assemblers of farm products including co-operative associations organized for the purpose of marketing agricultural products. Establishments engaged in manufacturing report to the annual Census of Industry and are, therefore, excluded from the merchandising census. However, sales branches (whether or not carrying stocks) maintained by manufacturers at locations apart from the plant for the purpose of selling the goods produced are included therein.

The services section of the Census is confined to a number of designated types of establishments including such kinds of business as barber shops, beauty parlours, hand laundries, and other personal services; also, photographers, undertaking establishments, and retail shops of all kinds. The annual surveys of motion picture theatres, power laundries, dry cleaning establishments, hotels, etc., are incorporated with the other surveys of the Census of Distribution.

The census of service establishments is restricted to established places of business. It does not include domestic services provided in homes, nor does it include professional services (doctors, lawyers) or trade services, such as masonry, carpentry, electric contracting, or plumbing. Retail shops maintained by electric contractors or plumbers for the sale of electrical or plumbing equipment or supplies are included in the retail section of the Census. Retail stores operated by public utilities for the sale of appliances (gas or electric) are also included.

The published information relates to the number of stores, annual sales, personnel and payroll, year-end stocks, and accounts receivable. Tabulations are made for all stores in total and for stores classified according to kind of business transacted. Separate details are given for chain stores according to amount of annual sales, number of employees, and the relative proportions of cash and credit business transacted. The results are also shown on a geographical basis, in considerable detail for Canada and each of the provinces or economic areas. Tabulations containing lesser

Detail are shown for cities of 30,000 population and over, while data in still more summary form are given for each county or census division. Additional data on sales of specific commodities or commodity groups are also published.

Organization

The 1951 Census of Distribution was carried out, as were previous censuses, in two parts. The first part took place in June, 1951, and consisted of enumeration, by the Population Census enumerators, of all relevant establishments in Canada. Population census enumerators were employed for this purpose, for reasons of economy and administrative convenience. The second part, which is still in progress, consisted of the mailing and follow-up of schedules to these establishments. Original inquiries were mailed in the early part of 1952, however the task of getting the completed schedule returned is not yet finished. Follow-up procedure here is standard and consists of a number of spaced mail inquiries and finally (for larger establishments) action by the Bureau's Regional Offices.

Different schedules are used for each of the three main types of distributive trade and there is a further differentiation for special kinds of business within each main trade, and an abbreviated version of the schedule for small establishments. Commodity breakdowns of sales were requested from all large establishments and from a sample of the smaller establishments.

Special features embodied in the 1951 Census, aimed at increasing efficiency, were as follows:

1. A special enumeration folio was used for the original listing, containing a booklet of alternate card stock and paper stock forms. The listings were made in duplicate by inserting carbon paper. The card stock was detached and returned to head office, where it was cut into 3" x 5" mailing cards. This avoided the costly procedure of writing cards by hand, which would have ensued if listings were returned to the head office. In practice, this procedure was discovered to have a disadvantage in that carbons were sometimes illegible and the clerks and typists handling the data had to interpret the writing of a great many different enumerators.
2. For a very large proportion of the 250,000 establishments within the scope of the census, four-part continuous fanfold forms were prepared, one original, one file copy, and two follow-ups. These were all addressed at one time.
3. All schedules have a space for a code down the right hand side and punch cards are prepared from the schedules. No intermediate record is necessary. All the basic information for an establishment is now punched on one card. A second card (in some cases, more than one) is prepared for commodity information. Here, a system of dividing the punch card into 11 commodity "fields" enabled recording of a number

of individual commodity sales, reported by one establishment, on one card.

4. A trial census was held prior to the main undertaking to test new forms and enumeration procedures and this provided key personnel with valuable practical experience. A number of changes were made as a result of experience gained in this way. The trial census was thus extremely valuable as far as it went; however it is now believed that it could have been even more valuable than was realized at the time, if it had been carried through to its logical conclusion in all respects.

Intercensal Surveys

Retail Trade, Monthly

Dollar estimates of retail trade (not adjusted for price change) are made from the results of a sample survey of retail stores. Monthly sales are obtained from a sample of 7,200 independent stores and from a sample of chain store firms representing 85 per cent coverage (by sales volume) of all chains.

Sales are reported each month on a questionnaire card. When the card is despatched, the percentage change in sales for the previous month (as compared with the same month a year ago) for the appropriate trade and province is inserted on a stub. This provides the merchant with the basic results of the survey as concerns his own business and is a guide against which he may compare his sales experience with the average for his group. This maintains his interest in continuing to report. Co-operation of various retail trade associations is generally obtained through the offices of the Canadian Retail Federation. Non-reporting firms receive a follow-up at the middle of each month and if there is no response for several months, the follow-ups range from a card reminder to a registered letter, and finally, action through the Regional Offices. This is also standard procedure for other surveys.

On the current return, last year's figures are also inserted and editing consists of checking with a record card on which each month's sales for a 5 year period are posted. Tabulation is by adding machine from the record cards, and summary calculations are transferred to large work cards, one for each trade and province and separately for independent and chain stores. Independent store sales are calculated by applying percentage changes in the sample sales from those of the same month a year ago to the final monthly figure of the previous year. This is done by sales-size cells within each trade and province. Independent and chain results are then added to produce the current month's estimated retail sales.

The present series of monthly dollar sales estimates began with the year 1947. The sample requires improvement in some segments and, ideally, would include about 10,000 independent firms rather than 7,200. A monthly response factor of less than 100 per cent reduces the number of

reports on which to base sales estimates although by the time the annual summary is prepared a large proportion of the monthly delinquents have sent in their sales data.

The 10-year interval between censuses makes it very difficult to provide reliable trade statistics from a sample reporting panel, as the end of the interval approaches. Following the 1951 Census of Distribution it is planned to select a new and larger sample and to give more detail, i.e., specify more trades and possibly provide some sales data for metropolitan areas.

Retail Trade, Annual

An attempt is made to obtain complete reports for all respondents in the monthly sample. These are tabulated by comptometer – sales for current and previous year by months, trades, and provinces – and percentage changes applied to last year's final sales estimates. As in the case of the monthly estimates, this is done separately for independent stores. A separate annual survey of all known retail chains is made and results from this are added to the independent store estimates. In addition to sales estimated from this continuing sample, it is necessary to obtain some estimate of the increase or decrease in sales due to store "births", "deaths", and changes in classification. This is done with the co-operation of the Special Surveys Division. Once a year the retail businesses in each area covered in the Labour Force Survey are listed. New stores are contacted, sales obtained, and expansion factors applied according to the coverage of the area sample. The estimates are added to the figures derived from the continuing sample and chain store survey. The additional sales are pro-rated over the 12 months to give final estimated sales by months, trades, and provinces. These results form the base for the following year's monthly estimates of retail sales.

Department Store Sales

A selected group of the largest department stores is sent a supply of reporting cards with return envelopes on which to report total weekly sales on a provincial basis. From these, percentage changes in sales by provinces over the same week of the previous year are calculated and a weekly release published within the week following. These releases serve as up-to-date indicators of trends in retail trade.

A large group of firms report total monthly sales by departments and a preliminary release of percentage changes in sales by provinces is published. In addition to these trends in total sales, a detailed report of sales and stocks by departments (but not by province) is received. Some smaller firms do not report the requested "30 departmental" breakdown but the departmental results obtained from the reporting firms are used to estimate the overall total department store sales and stocks.

Response to this survey is practically 100 per cent as the respondents are large firms with adequate records and are keenly interested in watching the trends in their trade.

A contemplated post-census improvement in this series is the establishment of an index of sales by provinces on a monthly basis. In this mail order sales will be excluded. This will provide a better trend for many firms not engaged in the mail order business.

Chain Store Sales and Stocks, Monthly

As noted above, sales of chain stores are obtained and used in estimating monthly retail trade. A special demand for separate data on chain stores, however, resulted in the establishment of a separate survey. Sales are obtained from the individual retail monthly reports in six selected trades. The firms in the sample are also asked to report previous month-end inventories at selling price. Total estimated sales and stocks are calculated for these trades, also stock-sales ratios. As in the case of department stores, the respondents are large firms interested in the results for their own purposes and the response is very good. While coverage is not 100 per cent, all the large firms are included which guarantees that the results are very reliable. An improvement in this survey would be its expansion to cover more trades.

Retail Chains, Annual

This is an annual survey of all known retail chains (defined as the operation of four or more retail outlets under the same ownership and carrying on the same or similar kind of business). Co-operation of other government departments is obtained in checking lists for new chain firms. Between census years, Unemployment Insurance classifications, trade magazines and other sources are checked to keep the list as complete as possible. Here, too, the firms are generally large with adequate records and interested in the statistics, hence the response is very good. Information is secured on the number of stores operated, sales for each, employees' salaries, stocks on hand, and outstanding accounts for all stores combined. Editing is done by comparing with previous annual reports and compilation is by adding machine. Approximately 550 firms operating 7,000 stores constitute the retail chain store business in Canada.

Publications show basic data by kinds of business, province, and stocks and sales for some trades by cities. A check with the 1951 Census listings confirmed the reliability of this survey in that only very few small firms were added to the established list. The results of this survey are used in the final retail trade estimates.

Operating Results and Financial Structure – Independent Retail Stores

Twenty major retail trades are covered by this biennial operating cost survey. A sample of 17,000 retail stores (originally selected in 1944) is

canvassed for complete trading, profit and loss, and balance sheet data. The co-operation of the firms is obtained by their own interest and by the efforts of the Canadian Retail Federation and affiliated trade associations. However, the response is not as complete as in other surveys. Standard follow-up procedures are used except that neither the powers of the Statistics Act nor the facilities of the Regional Offices are brought to bear on non-respondents. It is considered that the reporting of profits, which are recorded in this survey, must be voluntary. Approximately 10,000 usable reports are received and tabulated. Editing includes careful checking of various expense items within pre-determined limits of percentages to net sales; considerable correspondence (mostly form letter) and checking with previous reports are necessary. Pre-adding or balancing is done by comptometer and tabulation carried out by the peg-board method. For the most part, results are presented as percentages of net sales but certain store averages in dollar terms are also published. All results are shown in sales-size ranges.

Operating Results of Retail Chains

Questionnaires are mailed to all firms in 10 major trades. The regular annual chain store survey and the operating results survey are co-ordinated in the alternate years when this latter study is undertaken. One form serves the purpose of both surveys and avoids duplicate reporting. Profit and loss data are obtained and edited as in the case of independent retail stores mentioned above. In this study it is not possible to obtain operating results on a store basis but only for the firm as a unit.

Retail Consumer Credit

This quarterly survey covers 13 retail trades by sampling some 2,500 firms. These firms report cash, instalment, charge account, and total sales, and instalment and charge accounts outstanding at the end of the quarters. Tabulation is done by peg board. Realizing the importance of statistics on retail consumer credit, most firms co-operate and, in turn, make their own comparisons with the published results.

The sample provides estimates of percentage composition of sales components which are applied to the total retail sales, as estimated in the monthly retail trade survey, to give estimated cash, instalment, and charge sales. Accounts outstanding are obtained by applying the trend from the sample to the census base year.

Wholesale Trade

Indexes of sales are calculated from a continuing sample of wholesale firms in 9 kinds of business. Procedure is similar to that used for retail sales. However, no revision is made for possible increase or decrease in number of es-

tablishments in operation. Inventories are also obtained and changes in stock levels published along with the sales indexes. The sample has been operating for several years and no serious problems of response have arisen. As with other sample surveys, a new sample will be selected following completion of the 1951 Census of Distribution. Post-census plans for wholesale trade statistics include dollar estimates rather than indexes of sales, and adjustment for net change in number of establishments.

Operating Results of Wholesalers

This biennial survey is carried out in a similar manner to the other operating results studies. All wholesalers proper, (i.e., those performing the functions of warehousing and delivery and taking title to the goods sold) in ten major trades handling consumer goods are included in this study. A large percentage of usable reports is received.

Theatres

A complete survey of theatres, community halls, and itinerant operators is made annually, yielding a comprehensive picture of motion picture entertainment. The respective associations co-operate, and lists of licensed operators are obtained each year from the various provincial authorities. Record cards are used for posting and, at the same time, serve as editing checks with previously reported figures. A survey of film distributors is also conducted annually and results published in the theatre report.

Farm Implement and Equipment Sales

This annual survey covers a special field to meet a specific demand. Industry statistics show production of farm implements and equipment. To collect sales data from the retail trade annually for specific commodities would be extremely difficult, hence this information is obtained from the industrial firms which report their branch sales at wholesale prices, or directly from importers. Export sales of Canadian industry are not included nor are import sales duplicated by other dealers. Response is very good and usually all reports are received by the end of May. Canada totals and Prairie Province totals are reported for units and sales of some 210 different types of implement or equipment. Tabulation of this survey is by Hollerith card. The Dominion Experimental Farm and other sections of the Department of Agriculture assist in planning questionnaires to account for new machines.

Laundries, Cleaners and Dyers

An annual survey of power establishments in this industry provides data on receipts, employment and payrolls, operating expenses, etc. All plants are covered, lists being obtained from the Unemployment Insurance Commission and checks made from trade magazines. The Association of Cleaners and Dyers co-operates whenever possible and standard follow-up procedures are used.

Advertising Agencies

The amount of total billings and gross revenue from various sources is obtained in this survey. Coverage is 100 per cent with full co-operation of the firms and the Association of Canadian Advertisers. This survey includes only agencies, generally large in volume of business, which place advertising for large accounts on a fee basis. They may also do some creative work but generally contract any printing or other production work out to other firms.

Hotels

Fairly complete data on hotels in Canada are collected and published annually. Statistics include: number of hotels, rooms, occupancy rate, employment, cost of goods, breakdown of receipts between room rental, meal sales, beer, liquor and wine sales, leased concessions, and operating expenses. These statistics are tabulated separately, for full-year and part-year, licensed and non-licensed (to sell alcoholic beverages) unincorporated and incorporated hotels. Tabulation is by Hollerith card. Response is very good but some follow-up by the Regional Offices is necessary. The Hotel Association of Canada assists in planning the questionnaire and co-operates fully in all aspects of the survey. Provincial Governments provide lists of licensed hotels.

Motor Vehicle Sales and Sales Financing

Monthly statistics on number and retail sales value of new motor vehicles are obtained from manufacturers and importers. Export sales are not included. This, like farm implement sales, is a special survey in that the data are obtained mainly at the manufacturing level. It would be impossible to keep track of all new motor vehicle sales at the retail level. The manufacturer collects monthly sales from his agencies and submits a consolidated report. Direct importers report number and sales of new vehicles.

In conjunction with this report, a monthly survey of sales finance companies is conducted. This provides statistics on the number and amount of financing of both new and used vehicles, separating passenger and commercial types. Response and follow-ups parallel the new motor vehicle survey as does method of tabulation. The amount of motor vehicle financing is incorporated in the new motor vehicle sales report.

Sales Financing, Annual

All sales finance and acceptance corporations are surveyed on an annual basis. These include sales finance companies (not loan companies) whether they purchase instalment paper on motor vehicle sales or on other consumer or industrial goods. Results show amount of financing by type of goods and a summary by provinces as well as the amount outstanding at the year end.

Research and Development in the Industry and Merchandising Division

Research and Development in the Industry and Merchandising Division is conducted on an informal basis, responsibility in this field being chiefly with the Director and Section Chiefs, with the assistance of several interdivisional committees whose members include representatives of the Research and Development Division and the Industry and Merchandising Division.

Census of Industry Committee

This Committee is charged with the research directed to a gradual revision of manufacturing schedules and related operating procedures with a view to achieving certain goals, principally:

1. Minimizing burden of response on small establishments.
2. Relating statistical questionnaires to conventional accounting procedures.
3. Achieving balance and co-ordination amongst decennial, quinquennial, annual, and current surveys.
4. Achieving a uniform conceptual basis for collections in various industries involving such items as uniform definition of establishment, uniform treatment of custom work, etc.

A guiding principle of the Committee has been that industrial statistics are economic statistics and their usefulness must be gauged in terms of the extent to which they answer the questions arising from the current economic "climate". It is not to be understood from this that the needs of the so called "business man" are being ignored.

Several examples may illustrate this principle:

- (a) The price changes which have been a marked feature of the economy for the past 10 years have certain implications for statistics. In order to get at underlying realities it is necessary that there be a far greater emphasis on physical volume data, which are relatively unaffected by prices changes, than was previously the case.
- (b) A demand for more up-to-date information to meet emergent conditions must also be recognized in statistical collections. This, in turn, leads to a re-examination of concepts to see whether or not it is possible to extend definitions, etc., adequate for quinquennial or annual surveys, directly to monthly or quarterly surveys, or indeed whether the same type of statistic is appropriate to both.

Input-Output

A recently formed technical committee is supervising the development of an industry input-output table for Canada. It is expected that this project will eventually result in a high degree of integration in industrial statistics as well as having considerable value as a tool of statistical analysis.

Merchandising

An Advisory Committee on Merchandising is currently examining problems of sampling procedures, classification, analysis of seasonal variation, etc. A particular problem arising here is the relation between the concept "retail sales" and "personal expenditure on goods" as used in the National Accounts. A solution of any or all of these problems may result in radical changes in collection and presentation methods.

In the field of mining and manufacturing, coverage, both annual and current, is very comprehensive, and such gaps as exist are minor ones. Deficiencies tend to be more in analysis and interpretation than in collection. Excessive time intervals between collections and releases which have existed in the past have to a large extent been overcome and progress continues to be made in this direction.

In the field of merchandising, extensive use is made of sampling procedures. A precise formulation of the sampling error involved would be desirable. It is suspected that the accuracy of some published series is not high enough having regard to the purposes for which the estimates are used. Additional "kind of business" coverage would also be desirable in some surveys and the whole program of annual and monthly collections is now being reviewed in conjunction with the recent Census of Distribution.

Uses of Statistical Material Produced by the Division

Federal Government Departments and Agencies

1. Industry Studies Division, Trade and Commerce Department (preparation of brochures on industry conditions for the Minister).
2. Defence Production (assessing impact of defence program).
3. Various Royal Commissions (investigating prices, Dominion-Provincial Relations, etc.).
4. Industrial Development Bank (assessing potentialities in various industries).
5. Combines Investigation Commission (general background data).
6. Agriculture (statistics of meat processing, food packing, farm implement production and sales, etc.).
7. National Defence (location of strategic industries, etc.).
8. Foreign Trade Division, Trade and Commerce Department (answering inquiries *re* supply sources, export capacity, etc.).

9. Central Mortgage and Housing Corporation (statistics on production, shipments, stocks of building materials).
10. Bank of Canada (consumer credit and, generally, most "economic statistics").
11. Finance Department (consumer credit).
12. Canadian Government Travel Bureau (hotel capacity).

Provincial and Municipal Governments, Chambers of Commerce, Boards of Trade, etc.

Industrial statistics are used extensively in assessing present and potential capacity, etc. Provincial Governments receive duplicate schedules where permission has been granted the Dominion Bureau of Statistics to make the transfer.

Foreign Governments

Assessing possibilities for investments, markets, supply sources.

International Organizations

For compiling statistical summaries, calculating relative war potentials of various countries, determining international allocations of scarce commodities.

Universities

Material for use in lectures on applied economics, industry location, product diversification, concentration of markets, etc.

Private Individuals and Industries, Market Research Agencies, etc.

1. Assessing output or sales, against background of related industry, province, and kind of business trends, calculating share of market, estimating effect of advertising programs, etc.
2. As a guide to location of new plants, and production of new lines of goods.
3. In preparing briefs relating to prices, tariffs, taxes, etc.

Labour Organizations

Calculating productivity ratios for use in wage negotiations (from industry output and employment statistics) and interindustry wage comparisons.

Number, Periodicity and Nature of Reports

Note: The results of the annual Census of Industry are published in a series of industry reports which are much alike with regard to contents. Usually, each report gives principal statistics for a period of years and data for the year under review and for the immediate preceding year on employees and their earnings, size of establishments, principal materials used, principal products manufactured, the total Canadian production, imports and exports of the important commodities made in the industry, and a list of reporting firms. Other related statistics are often included.

When reference is made to "Industry Report" in the following list, it may be assumed that the contents are as mentioned above.

Report	Number	Periodicity	Contents
Animal Products Section:			
The Dairy Factory Industry	1	Annual	Industry Report.
Margarine Statistics	1	Monthly	Production and stocks.
The Process Cheese Industry	1	Annual	Industry Report.
Oils and Fats	1	Monthly	Production, stocks, consumption in margarine and shortening. Crushings of vegetable oil seeds.
The Slaughtering and Meat-Packing Industry	1	Annual	Industry Report.
The Sausage and Sausage Casings Industries	1	Annual	Industry Report.
General Review of the Leather Products Industries	1	Annual	Summary by industries and by provinces of principal statistics, production, employment, etc.
The Leather Footwear and Leather Boot and Shoe Findings Industries	1	Annual	Industry Report.
Production of Leather Footwear	1	Monthly	Production by types.
The Leather Glove and Mitten Industry	1	Annual	Industry Report.
Hides, Skins, and Leather	1	Monthly	Wettings and stocks of raw hides; production, deliveries, and stocks of finished leather.
The Leather Tanning Industry	1	Annual	Industry Report.
The Miscellaneous Leather Products and Leather Belting Industries	1	Annual	Industry Report.
The Fur Goods and Fur Dressing Industries	1	Annual	Industry Report.
Commodity Section:			
Inventories and Shipments by Manufacturing Industries	1	Monthly	Indexes of values of manufacturers' inventories and shipments.
Fisheries Section:			
Fisheries Statistics of Canada	1	Annual	Landings, marketings, and processing, by provinces.
Monthly Review of Canadian Fisheries Statistics	1	Monthly	Landings, disposition, stocks and prices.
Cold Storage Holdings of Fish	1	Monthly	Freezings and stocks.
The Fish Processing Industry	1	Annual	Industry Report.
Forestry Section:			
Operations in the Woods	1	Annual	Final estimate of forest production.
General Review of the Wood-Using Industries	1	Annual	Summary by industries and by provinces of principal statistics, employment, production, etc.
The Lumber Industry	1	Annual	Industry Report.
Production, Shipments and Stocks for Sawmills in British Columbia	1	Monthly	Quantities by species.
Production, Shipments and Stocks for Sawmills East of the Rockies	1	Monthly	Quantities by species.
The Furniture Industry	1	Annual	Industry Report.
The Sash, Door and Planing Mill Industry	1	Annual	Industry Report.
The Veneers and Plywoods Industry	1	Annual	Industry Report.
The Hardwood Flooring Industry	1	Annual	Industry Report.

DOMINION BUREAU OF STATISTICS
INDUSTRY AND MERCHANDISING DIVISION

Chart showing function
and organization

DOMINION BUREAU OF STATISTICS

INDUSTRY AND MERCHANDISING DIVISION

Responsible for (a) the annual Census of Industry; (b) monthly and quarterly statistics on production of important commodities; and on inventories and shipments for major industries; (c) the decennial Census of Distribution; (d) monthly and annual data on retail and wholesale trade, and on certain services. The staff of the Division numbers 222.

Director, W. H. Loebe, Statistician Grade 8
Assistant Director, H. McLeod, Statistician Grade 6

General Staff - 4
1 Principal Clerk
1 Stenographer Grade 3
2 Clerks Grade 2B

CENSUS OF INDUSTRY

Complete annual survey of mining, fishing, operations in the woods and manufactures, providing an industrial and geographical breakdown of statistics on establishments, employment, payroll, cost of fuel and electricity, cost of materials and value of production as well as complete details of commodity production and considerable data on consumption of materials. Monthly production on a large number of important commodities. Monthly indexes of manufacturers' inventories, shipments and orders. The staff numbers 122.

MERCHANDISING AND SERVICES

Complete decennial census of all retail, wholesale, and service establishments. Monthly and annual interannual statistics in these fields. The staff (including census temporaries) numbers 95.

ANIMAL PRODUCTS SECTION

Annual census of the manufacturing industries based on animal products including dairy factories, slaughtering and meat packing, leather products, fur goods, etc. Monthly statistics on margins, oils and fats, leather footwear. The staff of the Section numbers 9.

Chief, W. H. Lancelley, Technical Officer Grade 3

1 Statistician Grade 2
1 Clerk Grade 4
3 Clerks Grade 2
3 Clerks Grade 2A

Mechanical Equipment:
1 Calculator
2 Adding Machines

FISHERIES SECTION

Annual census of fisheries and fish processing including complete details of the yearly catch and on marketing, processing, etc. Monthly statistics on the catch of fish and on its disposition, monthly data on storage stocks and on freezings. The staff of the Section numbers 7.

Chief, R. Johnson, Statistician Grade 4

1 Statistician Grade 1
1 Clerk Grade 4
3 Clerks Grade 2A
1 Clerk Grade 1

Mechanical Equipment:
1 Calculator
1 Computer
1 Adding Machine

GENERAL MANUFACTURES SECTION

Annual census for manufacturing industries in the following major groups: foods and beverages, textiles, tobacco, rubber products, miscellaneous. Monthly and quarterly statistics in these fields. Assembles statistics for all manufactures on industry and geographical basis. The staff of the Section numbers 31.

Chief, A. Cohen, Statistician Grade 4

General Staff - 1
1 Statistician Grade 2

Mechanical Equipment:
1 Calculator
1 Computer
1 Adding Machine

FORESTRY SECTION

Annual estimate of the value of forest production. Annual census of the lumber and pulp and paper industries and of other industries which use wood and paper as principal materials. Annual census of the printing trades. Monthly statistics of saw-mills production, asphalt roofing, asphalt floor tile, rigid insulating board. The staff of the Section numbers 21.

Chief, L. J. Poulin, Statistician Grade 4

1 Statistician Grade 3
1 Supervising Clerk Grade 3
3 Clerks Grade 4
9 Clerks Grade 2B
3 Clerks Grade 2A
1 Clerk Grade 1

Mechanical Equipment:
2 Adding Machines
1 Calculator
5 Computers

COMMODITY SECTION

Monthly survey of value of manufacturers' inventories and shipments under terms of annual estimates of principal statistics for small firms in the Census of Industry. Annual preliminary estimate of output of 1,000 commodities. Spec studies. The staff of the Section numbers 35.

Chief, F. J. Rashley, Technical Officer Grade 5

1 Technical Officer Grade 3
1 Statistician Grade 2
1 Technical Officer Grade 2
3 Clerks Grade 3
4 Clerks Grade 2B
2 Clerks Grade 2A

Mechanical Equipment:
4 Adding Machines
4 Calculators

MINING, METALLURGICAL, AND CHEMICAL SECTION

Annual census of the mineral industries and of the manufacturing industries which produce mineral products as principal materials. Monthly commodity statistics for important products made by industries in these groups. The staff of the Section numbers 35.

Chief, H. McLeod, Statistician Grade 6

General Staff - 4
1 Typist Grade 2B
1 Typist Grade 2A
2 Clerks Grade 2A

Mechanical Equipment:
4 Adding Machines
4 Calculators

CENTRAL INDEX

Alphabetical and geographical index of active manufacturing plants. Correspondence files for Census of Industry subdivisions. Search for new firms.

Staff - 5
1 Supervisor, Clerk Grade 4
1 Clerk Grade 3
1 Clerk Grade 2B
1 Clerk Grade 2A
1 Clerk Grade 1

DECENNIAL CENSUS OF DISTRIBUTION

Decennial census of all retail, service, and wholesale establishments, providing information on number of establishments, sales, stocks, employees, payroll, credit sales, accounts outstanding, etc. Special survey on monopolies. This is a temporary section. The staff numbers 66 at present.

Chief, A. Cohen, Statistician Grade 4

General Staff - 17
1 Technical Officer Grade 3
2 Stenographers Grade 2A
1 Typist Grade 2A
1 Census Supervisor
12 Census Clerks

MERCHANDISING AND SERVICES SECTION

Interannual data on distribution including monthly and annual value estimates of retail trade; monthly indexes of wholesale trade; annual surveys of hotels, laundries, etc.; biennial surveys on operating results of independent retail stores, and related studies. The staff of this Section numbers 29.

Chief, A. Cohen, Statistician Grade 4

General Staff - 1
1 Technical Officer Grade 3

INTEGRATING UNIT

Summary reports for all manufactures. Receives industry totals from other units and prepares summaries for all manufactures by provinces, counties or census divisions, and principal lists of products and materials used.

Staff - 6

Supervisor, Principal Clerk
1 Clerk Grade 4
1 Clerk Grade 3
3 Clerks Grade 2B

Mechanical Equipment:
1 Calculator
4 Computers

FOODS AND BEVERAGES UNIT

Annual reports for industries in the following major groups: Foods and beverages (except cereals and dairy products), tobacco and tobacco products, poultry goods. Monthly statistics on prepared stock and nibbler feeds, quarterly data on processed foods, seasonal reports on pack of canned fruits and vegetables.

Staff - 13

Supervisor, Supervising Clerk
4 Clerks Grade 4
4 Clerks Grade 3
1 Clerk Grade 2B
3 Clerks Grade 2A

Mechanical Equipment:
3 Adding Machines
1 Calculator
2 Computers

TEXTILES UNIT

Annual reports for primary textiles and for the textile and clothing industries.

Staff - 7

Supervisor, Statistician Grade 2
1 Clerk Grade 4
1 Clerk Grade 3
2 Clerks Grade 2B
2 Clerks Grade 2A

Mechanical Equipment:
1 Calculator
2 Computers

MISCELLANEOUS INDUSTRIES UNIT

Annual reports for industries not covered by other units such as fabricated plastic products, musical instruments, brooms, brushes and mops, and car statistics, including and scientific equipment, etc. Monthly production of photographic records.

Staff - 3

Supervisor, Clerk Grade 4
1 Clerk Grade 3
1 Clerk Grade 2B

Mechanical Equipment:
1 Adding Machine

MINERALS UNIT

Year-end estimate of mineral production. Annual reports for the mineral industries such as gold mining, asbestos mining, etc. Monthly production of 15 leading minerals. Monthly coal and car statistics, including output, retail sales, industrial consumption. Monthly statistics on consumption of non-ferrous metals.

Staff - 20

Supervisor, Statistician Grade 3
1 Supervising Clerk Grade 2
1 Principal Clerk Grade 4
7 Clerks Grade 3
4 Clerks Grade 2B
4 Clerks Grade 2A
1 Typist Grade 2A

Mechanical Equipment:
5 Adding Machines
1 Calculator

MANUFACTURES UNIT

Annual reports for the industries included in the following major groups: Iron and steel products; non-ferrous metal products; non-metallic mineral products; electrical apparatus, and car statistics, including output, retail sales, industrial consumption. Monthly statistics on consumption of non-ferrous metals.

Staff - 11

Supervisor, Statistician Grade 3
1 Statistician Grade 2
3 Clerks Grade 4
3 Clerks Grade 3
1 Clerk Grade 2B
1 Office Appliance Operator Grade 2B

Mechanical Equipment:
3 Adding Machines

RETAIL AND SERVICES UNIT

Compilation for retail chains, independent stores, and multiples, including automotive; personal service establishments; business services such as advertising agencies, etc.; small machine shops, garages, etc.

Staff - 13

Supervisor, Statistician Grade 2
3 Census Supervisors
28 Census Clerks
1 Stenographer Grade 2A

WHOLESALE UNIT

Wholesale agents and brokers, manufacturers' sales outlets, chain elevators and sales by wheat boards, bulk tank stations for oil and gasoline, buying and selling co-operatives, etc.

Staff - 16

Supervisor, Statistician Grade 2
2 Census Supervisors
12 Census Clerks
1 Clerk Grade 2A

RETAIL TRADE UNIT

Monthly sales estimates for 26 trades, by provinces; department store sales weekly and monthly; by provinces, by departments; chain store sales and stocks monthly and annually; annual revised summary of monthly estimates.

Staff - 12

Supervisor, Statistician Grade 1
2 Clerks Grade 4
7 Clerks Grade 2B
2 Clerks Grade 2A

WHOLESALE, SERVICES, SPECIAL FIELDS UNIT

Annual surveys on theatres, hotels, laundries, dry cleaners, advertising agencies, couriers, freight or air, employment and other special features. Monthly indexes of wholesale sales, monthly sales of motor vehicles and financing.

Staff - 6

Supervisor, Technician Grade 2
1 Officer Grade 2
1 Clerk Grade 3
3 Clerks Grade 2B
3 Clerks Grade 2A

Mechanical Equipment:
1 Adding Machine
1 Calculator

BUSINESS OPERATIONS UNIT

Operating results and financial structures (profit and loss and balance sheet items) of independent retail stores covering 20 trades. This is a biennial survey with retail chains and wholesale firms, alternated with independent stores. Retail consumer credit - quarterly trends in cash, charge, and installment sales and returns, by trade.

Staff - 8

Supervisor, Technical Officer Grade 2
2 Clerks Grade 3
2 Clerks Grade 2B
2 Clerks Grade 2A
1 Typist Grade 2A

Mechanical Equipment:
2 Adding Machines
1 Calculator

Number, Periodicity and Nature of Reports – Continued

Report	Number	Periodicity	Contents
Forestry Section – Concluded:			
The Miscellaneous Wood-Using Industries	1	Annual	Industry Report.
General Review of the Paper-Using Industries	1	Annual	Summary by industries and by provinces of principal statistics, employment, production, etc.
The Pulp and Paper Industry	1	Annual	Industry Report.
Rigid Insulating Board	1	Monthly	Production and domestic sales.
The Paper Box and Bag Industry	1	Annual	Industry Report.
The Roofing Paper Industry	1	Annual	Industry Report.
Asphalt Roofing	1	Monthly	Production, shipments, exports.
Asphalt Floortiles	1	Monthly	Production, sales, imports.
The Miscellaneous Paper Goods Industry	1	Annual	Industry Report.
The Printing Trades	1	Annual	Industry Report.
General Manufactures Section:			
The Manufacturing Industries of Canada	1	Annual	Three preliminary reports: Section 1—Principal statistics by major industrial groups and for leading industries. Section 2—Principal statistics by individual industries. Section 3—Geographical distribution of manufacturing industries.
Type of Ownership of Manufacturing Industries of Canada	1	Annual	Principal statistics by individual ownership, partnerships, incorporated companies, and co-operatives.
General Review of the Manufacturing Industries of Canada	1	Annual	Summary by industries and by provinces of principal statistics, employment, products, etc.
Preliminary Statement of Manufactures	1	Annual	Preliminary principal statistics by industries with preliminary production figures for about 1,000 commodities.
General Review of All Textile Industries	1	Annual	Summary by industries and by provinces of principal statistics, production, employment, etc.
General Review of Textiles, except Clothing	1	Annual	Summary by industries and by provinces of principal statistics, production, employment, etc.
The Cotton Textile Industries	1	Annual	Industry Report.
The Wool Textile Industries	1	Annual	Industry Report.
The Synthetic Textiles and Silk Industry	1	Annual	Industry Report.
The Narrow Fabrics Industry	1	Annual	Industry Report.
The Dyeing and Finishing of Textile Goods Industry	1	Annual	Industry Report.
The Awning, Tent and Sail Industry	1	Annual	Industry Report.
The Cordage, Rope and Twine Industry	1	Annual	Industry Report.
The Cotton and Jute Bag Industry	1	Annual	Industry Report.
The Miscellaneous Textile Industries	1	Annual	Industry Report.
The Rubber Industry	1	Annual	Industry Report.
Consumption, Production and Inventories of Rubber	1	Monthly	Details by types, imports and exports.
The Tobacco Industries	1	Annual	Industry Report.
Quarterly Consumption and Production of Unmanufactured Tobacco	1	Quarterly	Details by types.
General Review of the Foods and Beverages Industries	1	Annual	Summary by industries and by provinces of principal statistics, employment, production, etc.
The Fruit and Vegetable Preparations Industry	1	Annual	Industry Report.
Pack of Canned Fruits and Vegetables	16	Annual	Seasonal reports on 16 major items.
Preliminary Pack of Canned Fruits and Vegetables	1	Annual	Annual summary of seasonal packs of all kinds.
Quarterly Stocks of Canned Fruit and Vegetables	1	Quarterly	Inventories held by cannery, wholesalers, and chain store warehouses.

Number, Periodicity and Nature of Reports — Continued

Report	Number	Periodicity	Contents
General Manufactures Section — Concluded:			
The Flour and Feed Milling Industries	1	Annual	Industry Report.
The Breakfast Foods Industry	1	Annual	Industry Report.
The Prepared Stocks and Poultry Feeds Industry	1	Annual	Industry Report.
Inventories and Shipments of Prepared Stock and Poultry Feeds	1	Monthly	Shipments by provincial destination, and exports.
The Biscuit Industry	1	Annual	Industry Report.
The Bread and Other Bakery Products Industry	1	Annual	Industry Report.
The Carbonated Beverages Industry	1	Annual	Industry Report.
The Distilling Industry	1	Annual	Industry Report.
The Brewing Industry	1	Annual	Industry Report.
The Wine Industry	1	Annual	Industry Report.
The Confectionery Industry	1	Annual	Industry Report.
The Sugar Refining Industry	1	Annual	Industry Report.
The Macaroni and Kindred Products Industry	1	Annual	Industry Report.
The Miscellaneous Food Preparations Industry	1	Annual	Industry Report.
The Canned Foods Summary	1	Annual	Summary for the manufacture of canned foods of all kinds, principal statistics, employment, production, etc.
Quarterly Processed Foods	1	Quarterly	Production of 88 food items including biscuits, confectionery, fruit and vegetable preparations, canned meats, etc.
The Buckle, Button and Fastener Industry	1	Annual	Industry Report.
The Broom, Brush and Mop Industry	1	Annual	Industry Report.
The Musical Instrument Industry	1	Annual	Industry Report.
The Sporting Goods Industry	1	Annual	Industry Report.
Monthly Production of Records	1	Monthly	Production and sales, by sizes.
Mining, Metallurgical and Chemical Section:			
Preliminary Estimate of Mineral Production	1	Annual	Production summary, by items, for release on the first work-day of the following year.
Preliminary Report of Mineral Production	1	Annual	Detailed preliminary statistics of production, imports, and exports.
Production of Canada's Leading Minerals	1	Monthly	Production figures for sixteen leading minerals.
General Review of the Mining Industry	1	Annual	Summary by industries and by provinces of principal statistics, production, employment, etc.
The Gold Mining Industry	1	Annual	Industry Report.
Gold Production	1	Monthly	Production by provinces.
The Silver-Lead-Zinc Mining Industry	1	Annual	Industry Report.
Silver, Lead and Zinc Production	1	Monthly	Production, consumption, imports, and exports.
The Nickel-Copper Mining, Smelting and Refining Industry	1	Annual	Industry Report.
Copper and Nickel Production	1	Monthly	Production, consumption, imports, and exports.
The Miscellaneous Metal Mining Industry	1	Annual	Industry Report. Data for aluminum, iron ore, and 23 minor metals.
The Non-ferrous Smelting and Refining Industry	1	Annual	Industry Report.
Preliminary Report of Coal and Coke Statistics	1	Annual	Condensed annual summary of production, disposition, imports, exports.
The Coal Mining Industry	1	Annual	Industry Report. Complete details of production, consumption, etc., by provinces.
Preliminary Report on Coal Production	1	Monthly	Early estimate of tonnage produced, imports, exports.
Coal and Coke Statistics	1	Monthly	Production and disposition, imports, exports, retail sales.

Number, Periodicity and Nature of Reports – Continued

Report	Number	Periodicity	Contents
Mining, Metallurgical, and Chemical Section – Continued:			
The Natural Gas and Crude Petroleum Industry	1	Annual	Industry Report.
Crude Petroleum, Natural Gas and Manufactured Gas	1	Monthly	Production and sales.
The Asbestos Mining Industry	1	Annual	Industry Report.
Asbestos	1	Monthly	Production, by grades.
The Feldspar and Quartz Mining Industry	1	Annual	Industry Report.
The Gypsum Industry	1	Annual	Industry Report. Includes mining and gypsum products.
Gypsum Products	1	Monthly	Production, shipments, and stocks.
The Peat Industry	1	Annual	Industry Report.
The Salt Industry	1	Annual	Industry Report.
Salt	1	Monthly	Production by grades, imports, exports.
The Talc and Soapstone Industry	1	Annual	Industry Report.
The Miscellaneous Industrial or Non-metallic Minerals Mining Industry	1	Annual	Industry Report. Data for 24 minor non-metals.
The Cement Manufacturing Industry	1	Annual	Industry Report.
Cement and Cement Products	1	Monthly	Production and factory shipments of Portland cement, concrete blocks, brick, pipe, and ready mixed.
The Clay and Clay Products Industry	1	Annual	Industry Report.
Products Made from Canadian Clays	1	Monthly	Production, shipments, stocks of brick, tile, etc.
The Lime Industry	1	Annual	Industry Report.
The Sand and Gravel Industry	1	Annual	Industry Report.
The Stone Industry	1	Annual	Industry Report.
Contract Diamond Drilling in the Mining Industry	1	Annual	Footage drilled by contractors, income and employment; also, footage drilled by mining companies.
Purchases of Capital Goods, Process Supplies and Specified Services by Canada's Mineral Industries	1	Occasional	Expenditures shown by provinces and by industry groups under 55 headings.
General Review – Iron and Steel Products	1	Annual	Summary by industries and by provinces of principal statistics, employment, fuel, etc.
The Agricultural Implements Industry	1	Annual	Industry Report.
The Boilers and Plate Work Industry	1	Annual	Industry Report.
The Bridge Building and Structural Steel Industry	1	Annual	Industry Report.
The Hardware, Tools and Cutlery Industry	1	Annual	Industry Report.
Builders' Hardware	1	Monthly	Value of production.
The Heating and Cooking Apparatus Industry	1	Annual	Industry Report.
Stoves and Furnaces	1	Monthly	Production and factory sales by types.
Cast Iron, Sectional Boilers and Heating Radiators	1	Monthly	Production and factory sales.
Domestic Water Tank Heaters	1	Monthly	Production and factory shipments.
The Machinery Industry	1	Annual	Industry Report.
Domestic Washing Machines	1	Monthly	Production, factory shipments, and factory stocks.
The Machine Shops Industry	1	Annual	Industry Report.
The Iron Castings Industry	1	Annual	Industry Report.
Iron Castings and Cast Iron Pipe and Fittings	1	Annual	Tonnages made and shipped.
Sanitaryware	1	Monthly	Quantities made and shipped.
The Primary Iron and Steel Industry	1	Annual	Industry Report.
Primary Iron and Steel	1	Monthly	Production and factory shipments, imports and exports of pig iron, steel ingots and castings, and rolling mill products.
Steel Ingots	1	Monthly	Preliminary statement on production.

Number, Periodicity and Nature of Reports - Continued

Report	Number	Periodicity	Contents
Mining, Metallurgical, and Chemical Section - Continued:			
Production of Iron and Steel	1	Monthly	Preliminary report on production and shipments of pig iron, steel ingots, and steel castings.
The Sheet Metal Products Industry	1	Annual	Industry Report.
Domestic Range Boilers	1	Monthly	Number produced and shipped.
The Wire and Wire Goods Industry	1	Annual	Industry Report.
Steel Wire and Specified Wire Products	1	Monthly	Quantities of wire, fencing, nails, rope, etc., produced and shipped.
The Miscellaneous Iron and Steel Products Industry	1	Annual	Industry Report.
Scrap Iron and Steel	1	Monthly	Tonnages used in steel furnaces, iron foundries, and blast furnaces.
Scrap Iron and Steel	1	Annual	Final figures on consumption.
General Review - Transportation Equipment	1	Annual	Summary by industries and by provinces of principal statistics, employment, fuel, etc.
The Aircraft and Parts Industry	1	Annual	Industry Report.
The Bicycle Manufacturing Industry	1	Annual	Industry Report.
The Boat Building Industry	1	Annual	Industry Report.
The Motor Vehicles Industry	1	Annual	Industry Report.
Motor Vehicle Shipments	1	Monthly	Factory shipments, by types.
Preliminary Report on the Motor Vehicles Industry	1	Annual	Preliminary annual principal statistics and production.
The Motor Vehicle Parts Industry	1	Annual	Industry Report.
The Railway Rolling Stock Industry	1	Annual	Industry Report.
The Shipbuilding Industry	1	Annual	Industry Report.
Miscellaneous Transportation Equipment	1	Annual	Industry Report. Includes carriages, wagons, sleighs, etc.
General Review - Non-ferrous Metal Products	1	Annual	Summary by industries and by provinces of principal statistics, employment, fuel, etc.
The Aluminum Products Industry	1	Annual	Industry Report.
The Brass and Copper Products Industry	1	Annual	Industry Report.
The White Metal Alloys Industry	1	Annual	Industry Report.
Non-ferrous Scrap Metal and Secondary Non-ferrous Ingot	1	Monthly	Production of ingot in secondary smelters, and scrap consumed.
The Jewellery and Silverware Industry	1	Annual	Industry Report.
The Miscellaneous Non-ferrous Metal Products Industry	1	Annual	Industry Report.
The Electrical Apparatus and Supplies Industry	1	Annual	Industry Report.
Radio and Television Receiving Sets	1	Monthly	Producers' sales by types and by provinces.
Factory Sales of Electric Storage Batteries	1	Monthly	Factory sales by types.
Domestic Electric Refrigerators	1	Monthly	Production, factory shipments, and stocks, by provinces.
Refrigeration Equipment	1	Annual	Preliminary production, by types.
General Review - Non-metallic Mineral Products	1	Annual	Summary by industries and by provinces of principal statistics, employment, fuel, etc.
The Artificial Abrasives Industry	1	Annual	Industry Report.
The Asbestos Products Industry	1	Annual	Industry Report.
The Cement Products Industry	1	Annual	Industry Report.
The Glass and Glass Products Industry	1	Annual	Industry Report.
The Miscellaneous Non-metallic Mineral Products Industry	1	Annual	Industry Report.
Mineral Wool	1	Monthly	Production, factory shipments, and factory stocks.

Number, Periodicity and Nature of Reports – Continued

Report	Number	Periodicity	Contents
Mining, Metallurgical, and Chemical Section – Concluded:			
General Review – Products from Coal and Petroleum	1	Annual	Summary by industries and by provinces of principal statistics, employment, fuel, etc.
The Coke and Gas Industry	1	Annual	Industry Report.
The Petroleum Products Industry	1	Annual	Industry Report.
Refined Petroleum Products	1	Monthly	Crude oil receipts, refinery production and shipments, marketing inventories, imports, domestic consumption.
Sales of Refined Petroleum Products	1	Monthly	Sales by refining companies and principal independent distributors.
Sales of Lubricating Oils and Greases	1	Annual	Sales, by provinces.
Consumption of Petroleum Fuels	1	Annual	Consumption, by provinces, and by end uses.
Refinery and Marketing Inventories and Domestic Consumption of Refined Petroleum Products	1	Monthly	Preliminary statement.
Inventories of Petroleum Products	1	Weekly	Inventories at refineries and marine terminals.
General Review – Chemicals and Allied Products	1	Annual	Summary by industries and by provinces of principal statistics, employment, fuel, etc.
Chemicals and Allied Products – Preliminary Summary	1	Annual	Preliminary principal statistics.
The Acids, Alkalies and Salts Industry	1	Annual	Industry Report.
Sulphuric Acid	1	Annual	Data on production and consumption.
The Fertilizers Industry	1	Annual	Industry Report.
The Fertilizer Trade in Canada	1	Annual	Data for the fertilizer year on sales, by provinces, counties, etc.
The Medicinal and Pharmaceutical Preparations Industry	1	Annual	Industry Report.
The Paints, Varnishes and Lacquers Industry	1	Annual	Industry Report.
Sales of Paints and Varnishes	1	Monthly	Value of sales.
The Primary Plastics Industry	1	Annual	Industry Report.
The Soaps, Washing Compounds and Cleaning Preparations	1	Annual	Industry Report.
The Toilet Preparations Industry	1	Annual	Industry Report.
The Vegetable Oils Industry	1	Annual	Industry Report.
The Inks Industry	1	Annual	Industry Report.
The Adhesives Industry	1	Annual	Industry Report.
The Polishes and Dressings Industry	1	Annual	Industry Report.
The Compressed Gases Industry	1	Annual	Industry Report.
The Coal Tar Distillation Industry	1	Annual	Industry Report.
The Miscellaneous Chemical Products Industry	1	Annual	Industry Report.
Sales of Pest Control Products	1	Annual	Sales by Canadian Registrants, by kinds.
Antifreeze Preparations	1	Annual	Sales of alcohol and glycol types.
Consumption of Chemicals in Municipal Waterworks	1	Biennial	Figures for principal chemicals used.
Chemical Directory	1	Occasional	List of chemicals manufactured in Canada with names of producers in each case.
Merchandising and Services Section:			
Retail Trade	1	Monthly	Total retail sales by provinces and kinds of business.
Retail Trade	1	Annual	Summary of revised monthly sales estimates.
Department Store Sales	1	Weekly	Percentage changes in sales, by provinces.
Department Store Sales (Preliminary)	1	Monthly	Percentage changes in sales, by provinces.

Number, Periodicity and Nature of Reports - Continued

Report	Number	Periodicity	Contents
Merchandising and Services Section - Continued:			
Department Store Sales and Stocks	1	Monthly	Total sales by provinces and departments, also stocks by departments.
Department Store Sales in Ottawa	1	Monthly	Percentage change in sales, by departments.
Chain Store Sales and Stocks	1	Monthly	Total sales and inventories for six trades (food, variety, women's clothing, hardware, shoes, drugs).
Retail Chains	1	Annual	Stores, sales, salaries, and accounts outstanding by kinds of business, also city data for some trades.
Operating Results and Financial Structure (Independent Stores): Retail Food Stores	1	Biennial	Sales, inventories, gross profit, itemized operating expenses, and net profit; assets, liabilities, and net worth.
Retail Clothing Stores	1	Biennial	Sales, inventories, gross profit, itemized operating expenses, and net profit; assets, liabilities, and net worth.
Retail Hardware, Furniture, Appliance and Radio Stores	1	Biennial	Sales, inventories, gross profit, itemized operating expenses, and net profit; assets, liabilities, and net worth.
Filling Stations and Garages	1	Biennial	Sales, inventories, gross profit, itemized operating expenses, and net profit; assets, liabilities, and net worth.
Miscellaneous Retail Stores (Restaurants, Coal and Wood Dealers, Drug Stores, Jewellery Stores, Tobacco Stores, Country General Stores)	1	Biennial	Sales, inventories, gross profit, itemized operating expenses, and net profit; assets, liabilities, and net worth.
Food Store Chains	1	Biennial	Sales, inventories, gross profit, itemized operating expenses, net profit.
Clothing Store Chains	1	Biennial	Sales, inventories, gross profit, itemized operating expenses, net profit.
Miscellaneous Chain Stores (Variety, Drug, Furniture)	1	Biennial	Sales, inventories, gross profit, itemized operating expenses, net profit.
Retail Consumer Credit	1	Quarterly	Estimated cash, charge, and instalment sales and accounts receivable by kinds of business.
General Review of Retail Trade	1	Annual	Summary of main features of retail sales, chain and department stores, retail consumer credit, and operating results.
Wholesale Trade	1	Monthly	Indexes of sales by regions and kinds of business.
Operating Results of Wholesalers: Food Wholesalers	1	Biennial	Sales, inventories, gross profit, itemized operating expenses, net profit.
Dry Goods, Piece Goods, and Footwear Wholesalers	1	Biennial	Sales, inventories, gross profit, itemized operating expenses, net profit.
Miscellaneous Wholesalers (Automotive Supplies, Hardware, Heating and Plumbing Supplies, Drugs)	1	Biennial	Sales, inventories, gross profit, itemized operating expenses, net profit.
Theatres	1	Annual	Number, receipts, taxes, admissions, employment, type of equipment. (Includes itinerant exhibitors and Film exchanges).
Farm Implements and Equipment Sales	1	Annual	Total sales by provinces; commodity sales for Canada and for the Prairie Provinces.
Laundries, Cleaners and Dyers	1	Annual	Number, receipts, employment, operating expenses.
Advertising Agencies	1	Annual	Number, employment, gross revenue, total billings, expenses.
Hotels	1	Annual	Number, receipts, employment, operating expenses, per cent occupancy of rooms, by type of hotel and province. Some city data.
Sales Financing	1	Annual	Amount of financing of consumer and commercial goods, balances outstanding, by commodities and provinces.

Number, Periodicity and Nature of Reports – Concluded

Report	Number	Periodicity	Contents
Merchandising and Services Section – Concluded:			
New Motor Vehicle Sales and Financing of Motor Vehicle Sales	1	Monthly	Number and value of new passenger cars, trucks, and buses. Number and financed value of new and used passenger commercial vehicles.
Motor Vehicle Sales and Financing of Motor Vehicle Sales	1	Annual	Summary of revised monthly totals.
Census of Distribution, 1951 –	1	Decennial	Final results of the Decennial Census. Details by provinces, counties or census divisions, and principal cities, on establishments, employees, payrolls, sales, inventories, accounts outstanding, etc.
1951 Census Volume VII, Retail Trade	1	Decennial	
1951 Census Volume VIII, Wholesale Trade and Services			
Advance Report on Retail Trade	11	Decennial	A series of 10 provincial reports with statistics on establishments, employees, payrolls, sales, inventories, etc., also Canada Summary.
Advance Report on Wholesale Trade	1	Decennial	Statistics for Canada and the provinces on establishments, employees, payrolls, sales, inventories, etc.
Advance Report on Retail Service Establishments.	1	Decennial	Statistics for Canada and the provinces on establishments, employees, payrolls, sales.

DOMINION BUREAU OF STATISTICS

INTERNATIONAL TRADE DIVISION

The International Trade Division is concerned with the collection and analysis of Canadian statistical information in the fields of international trade and international finance. Most of Canada's economic relations with other countries are touched in one way or another in covering this broad field.

Organization

The Division is organized in two Sections – External Trade and Balance of Payments. Each Section is subdivided into Units responsible for specific sections of the work (see accompanying chart). In addition, a small central staff is concerned with analysis and interpretation of Canada's foreign trade.

The staff of the Division numbers 131. Of these, 93 are in the External Trade Section, 34 in the Balance of Payments Section, and 4 in the Trade Analysis Unit. The staff ranges from the higher grades of professional and administrative personnel to both skilled and routine clerks. Large numbers of staff are engaged in production procedures which are closely integrated. Some of the senior personnel are concerned with the improvement and functioning of the lines of production while others are engaged more with analysis and elucidation of data collected. Special skills and wide knowledge are needed by many of the staff because of the breadth of subject matter covered and the importance of an understanding of the international, commercial, and financial background in the interpretation of data.

The original and basic statistical undertaking in the field of international trade has been, of course, the compilation and publication of statistics on Canada's foreign trade in commodities. This is the responsibility of the External Trade Section and the Bureau has been engaged in this statistical field since its inception. The function of the Bureau in this field has been progressively extended. Originally, operations conducted within the Bureau were largely confined to editing and publishing the trade statistics collected and compiled by the Customs Division of the Department of National Revenue. In 1938 the Bureau assumed responsibility for all compilations of trade statistics. Recently more attention has been given to analysis as well.

A later development, extending the Bureau's activities further into the field of international economic and financial statistics, was the preparation of statistics on the Canadian balance of international payments and international indebtedness. This work originated and was developed in

the Internal Trade Branch until the establishment in 1943 of a special Section responsible for the field of the Balance of International Payments.

The most recent extension in organization of the Division has been establishment of a special staff concerned with analysis and interpretation of statistics of Canada's foreign trade. While this is not a new sphere for the Bureau, the new postwar organization has set up analysis and interpretation as a full time continuing responsibility.

Advantages arise from combining these various functions within a single Division. There are, for example, advantages in accessibility to information and in following common concepts. The subject matter dealt with in the Division is related. Particularly close interrelationships exist between the balance of payments and foreign commodity trade.

Another kind of advantage arises in the work of interpretation and analysis. Much of this covers ground which is common to both foreign trade and the balance of payments as both are closely related. Overlapping research can be avoided by having the whole field covered in one Division. By combining both commercial and financial approaches, wider points of view are developed in the work of analysis and interpretation.

In covering this wide statistical field the Division encounters a variety of statistical and organizational problems. There are, for example, large scale compilation operations covering international commodity trade and travel movements. These involve the processing of some 14 million statistical forms in a year. The preparation of balance of payments statements, on the other hand, requires the selective use of statistical data and other information from numerous different sources. This leads to the co-ordination of different kinds of data and the need for adjusting these to a special use in conformity with conceptual principles which serve this use.

Methods of Collecting Basic Data

Methods of collection and processing vary widely due to the range of information dealt with. Some of the principal basic statistical data for which the Division is responsible are collected from the public through co-operative arrangements with other departments. In the case of statistics on foreign commodity trade and on international travel the basic data are collected through the administrative channels of other departments. For example, the administrative channel used by the External Trade Section in collecting statistics of

foreign commodity trade is the Customs Division of the Department of National Revenue. The entries covering export and import shipments which are used by that Department are employed jointly for administrative and statistical purposes. Copies of entries are sent to the Bureau for compilation and analysis. The copies of export entries are retained in the Bureau but the import entries are returned, after statistical processing, to the Customs Division for administrative use. Likewise, other customs permits and the border administrative machinery of that Department and of the Department of Citizenship and Immigration are employed in the collection of statistics on international travel.

In addition to the above there are a number of instances of compilations of other data collected by questionnaires specially designed to serve balance of payments or international investment purposes. The number of current items of the balance of payments and capital movements covered in this way was increased in 1952 following the termination of foreign exchange control in Canada since records of exchange transactions had been an important source of information in this field.

In covering many balance of payments items, questionnaires are sent to different groups of selected principals in Canada through whom particular international transactions pass. The extent of coverage varies with the subject. Some of these surveys aim at covering all transactions while others are samples based on a careful selection from a more complete survey taken at an earlier period.

Of basic importance in these series are the corporation records maintained in the Balance of Payments Section which show foreign ownership of Canadian companies. Besides providing a record of foreign capital invested in Canada these serve as a means of selecting mailing lists for particular kinds of questionnaires. For example, information on inflows of capital for direct investment in Canada is requested quarterly from only a selected group of foreign controlled companies. The companies covered for these shorter periods are those known to be undergoing substantial developments in Canada which are financed by capital inflows. But this complete group of corporate capital movements, along with related international service transactions is covered annually by a schedule sent to all companies in the foreign controlled category. Dividends paid by Canadian companies to non-resident shareholders are covered in a similar manner. Quarterly schedules are employed only to the minimum necessary for sampling the main trend while annual surveys cover the complete field.

Other schedules are sent out annually to all principals in Canada to cover such fields of interest to the balance of payments as international shipping transactions, railway freight, insurance company transactions, and the international business of trust companies.

Schedules are also used in establishing corporation records showing foreign capital invested in

Canada. Subsequently the value of these investments, as shown in company balance sheets, is reported annually, and the distribution of ownership, at varying intervals.

Statistics on international transactions in outstanding securities are collected monthly on Dominion Bureau of Statistics schedules. Some hundreds of Canadian security dealers, brokers, and banks send their returns in to the organizations or stock exchanges to which they belong. The latter, in turn, assemble these statistics reported by member firms and send summary returns to the Bureau which consolidates returns from all organizations and publishes them each month.

In connection with the preparation of balance of payments statements there are also a number of statistical techniques which are in a constant state of alteration and development to deal with international transactions of changing significance. Available sources of information are adapted to meet the purposes of the balance of payments wherever possible, keeping to a minimum the number of new statistical inquiries. The use of information on foreign exchange transactions in measuring capital movements during the period when Canada had exchange control was an example of this kind of statistical work. With the loss of this major source for some parts of the balance of payments, resort to an even wider use of sources of information has become necessary.

For example, since the loss of information on exchange transactions, the estimation of inflows of capital connected with sales of new issues of Canadian securities in the United States has led to the close following of a variety of sources of financial information. These sources are supplemented in some cases by correspondence with borrowers, lenders, and their agents. International military expenditures of governments are another example. Close liaison with various departments of the Canadian Government and integration of a variety of sources is necessary. Other international financial transactions of governments and official organizations also require close following up to clarify their significance for the balance of payments. Measurement of transfers of capital by migrants is another subject requiring close study and resort to a variety of statistical expedients.

Methods of Obtaining Co-operation of Respondents

The methods of obtaining the co-operation of respondents vary with the nature of the different statistical forms employed. When forms are used in connection with the administration of other departments of the government the information is usually required by law and enforcement procedures vary with the department concerned. The administrative channels employed usually ensure a comprehensive coverage of the field and in these particular compilations there are not the same problems of follow-up which are present in statisti-

cal inquiries where incomplete coverage arises out of the nature of the field and the statistical arrangements.

In the case of estimates of travel expenditures obtained through the co-operation of other departments, it has been found that satisfactory statistics on expenditures can be obtained by voluntary questionnaires.

In the case of schedules sent out directly by the Balance of International Payments Section, most of the respondents co-operate voluntarily. Only in a few exceptional cases has it been necessary to employ legal measures to obtain information.

Co-operative Arrangements

The employment of facilities of other government departments in the collection of basic statistics has led to close co-operation and liaison. The other departments gain through having their statistical needs met by the statistics compiled by the Bureau. At the same time, the Bureau is able to make use of these departmental facilities for the preparation of statistics to cover wider uses than those usually compiled by administrative departments. In this way, it is possible to integrate particular statistical series into the general body of national statistics with an avoidance of unnecessary overlapping.

Some of the co-operative arrangements with federal departments in the collection of statistics have already been referred to. Co-operation with the Customs Division of the Department of National Revenue is of long standing. On establishment in 1918 the Bureau undertook the editing and publishing of trade statistics. Since 1938 the compilation of trade statistics has also been assumed by the Bureau.

The present arrangements for the compilation of international travel statistics were instituted in 1940 and 1941. At that time a more uniformly classified count of traffic and larger and more representative samples of tourist expenditures were obtained as a result of co-operation between the Customs Division of the Department of National Revenue and what is now the Immigration Branch of the Department of Citizenship and Immigration and the Bureau. Among these arrangements was the provision of a copy for statistical purposes of each customs permit issued to travellers' vehicles entering Canada. At the same time the responsibility for statistics on international travel was transferred to the Balance of Payments Unit.

Another important arrangement was in effect with the Bank of Canada and the Foreign Exchange Control Board during the twelve years in which exchange control was in effect in Canada. As a result, foreign exchange information became available for use in the preparation of balance of payments statements. Particularly close relations existed between the statistical analysis of foreign exchange

transactions and the Bureau. Key personnel on balance of payments work in the Bureau were also engaged in the supervision of the analysis of exchange transactions conducted in the Foreign Exchange Control Board. Consequently this source of information was adapted to balance of payments purposes, and it was possible to discontinue the use of many Bureau schedules during this period thus avoiding duplications in government inquiries. In this arrangement there was the benefit to balance of payments work of closer contacts with many international transactions through administrative channels of exchange control. At the same time balance of payments statistics could be made more accessible to officials concerned with the administration of exchange control.

Another example of co-operation merits special mention because of its long standing. This is the co-operative exchange of statistics on international travel between the Balance of International Payments Section and the Balance of Payments Division of the United States Department of Commerce, which has been in effect for several decades. Under this arrangement the results of the sampling of certain types of international travel expenditures conducted by each organization and other travel records are made available to the other. Exchanges of information on other aspects of the balance of payments are also frequently made between the two organizations.

Arrangements have also been worked out with other organizations in the collection of statistics. For example, monthly statistics on the international trade in outstanding securities are collected through the co-operation of the Canadian Bankers Association, the Investment Dealers Association, and the principal stock exchanges in Canada. The members of these organizations report their transactions on Dominion Bureau of Statistics schedules to their respective associations. The latter assemble all returns from members and forward consolidated returns to the Bureau.

Integration with Work of Other Bureau Divisions

The work of the International Trade Division is integrated with that of other Divisions of the Bureau to meet particular needs. Personal contacts and committees are the usual channels. One example is the periodic provision by the International Trade Division of special international data employed in the National Accounts. This is facilitated by close co-operation between the experts concerned. Articles on subjects covered in the Division are prepared for *The Canada Year Book* and other Bureau publications. Likewise, special information and statistics required in the analysis of foreign trade and the preparation of interpretative data on the balance of payments and investments are promptly made available to the International Trade Division by other Divisions of the Bureau. This is facilitated by convenience in consultation and an absence of departmentalism.

Processing of Basic Data

The tabulation of statistics of foreign commodity trade and international travel statistics are large scale statistical operations mainly based on the Hollerith card method. Foreign trade entries dealt with in this way amount to more than 4 million annually. International travel covered by customs permits has a volume of some 2¼ million permits, of which about half are completely tabulated mechanically. The coding or classification of data and subsequent checking and auditing are fundamental parts of the operations carried out in the Division. A separate staff is engaged in auditing the results of the import compilation. In compilations where Hollerith cards are employed, later stages of tabulation are conducted in the Mechanical Tabulation Division.

In addition to these examples of mechanical tabulation there is also a very great volume of other types of international travel which is covered by statistical forms under clerical procedures designed for large scale tabulations. The volume of these other travel forms dealt with by clerical methods amounts to close to 8 million in a year.

In the course of all of these voluminous compilations it is necessary to conduct procedures of editing and checking to ensure quality. In the compilation of travel data a considerable amount of sampling of the returns is followed in order to reduce the volume of detail finally processed. A large number of the staff of both the External Trade Section and the Balance of Payments Section is engaged in handling these major compilations.

Other compilations such as some of the statistics collected by special schedule for the balance of payments and the records of international investments are tabulated by adding machine or other clerical methods. In some of these, the editing by professional and other experienced personnel is a more important stage in processing than the actual tabulation of returns. Likewise, other balance of payments data are the result of using secondary statistics from a variety of sources in which work initiative and judgment of a high order are required.

Analysis and Interpretation

One of the focal points of the analysis and interpretation of foreign trade statistics conducted in the Division is the *Review of Foreign Trade* which is a semi-annual publication. The text of this Review is concerned with the analysis and interpretation of current trends in the international background. It also relates these to other aspects of Canadian economic life and presents them in historical perspective. Analytical articles on trade are also written for other official publications e.g., the *Canadian Statistical Review* and *Foreign Trade*.

Valuable accessories to this work are the monthly and annual index numbers of prices and volume of Canadian exports and imports which are prepared in the Division. These are published in the greatest commodity detail in the Reviews of

Foreign Trade and also appear in other regular monthly bulletins and reports on Foreign Trade. Unit values reported in the trade returns are the principal sources used in constructing the index numbers. These are supplemented by other related price material.

Another aspect of the analytical work is participation in committees concerned with commodity classification. The special point of view connected with classification of foreign trade is thus related to the wider problems of commodity classification in general and the development of a new standard basis of classification. Other problems of trade statistics connected with concepts and international comparisons are also the responsibility of the staff concerned with interpretation and analysis.

The same analytical and interpretative approach has been applied in the work on the balance of payments for many years. Some of this is contained in the regular annual reports and some has gone into the preparation of several special reports in which the Canadian balance of international payments and international indebtedness is surveyed over a period of years. This type of work has also been indispensable in the responsibility of the Balance of Payments Section for providing the Government with statistics in this field. It is also necessary in adapting the form of the statements to the international background which is continually changing. An analytical approach is necessary, too, in judging the accuracy and completeness of balance of payments statements and in planning the development of the statistics employed. These integrated statements are designed to cover a field which is never static, and in which statistical sources must be continually adapted to changing circumstances.

Appraisal of Statistics

While the scope and quality of statistics collected in the International Trade Division appear to bear favourable comparison with other countries with developed statistics, there are various lines of improvement which seem to merit priority. These lie in the direction of qualitative improvement of data and presentation rather than in filling wide gaps in information. Some of the more fruitful lines of improvement such as the extension in the degree and kind of classification of foreign trade statistics can only be a long run objective. The more extensive alterations such as the adoption of a new system of commodity classification would require important extensions in staff, and alterations in administrative procedures involving in some cases changes in practices outside as well as inside the Division. Other lines of development lie in the direction of a closer integration of Canadian statistics of external and internal transactions. This would extend into most statistics collected in the Division such as foreign trade, the balance of payments, and international investments. The successful extension of this type of work requires close liaison with other Divisions in obtaining common concepts and classifications. Another

potential line of development is the publication of balance of payments statements more frequently than annually.

Some gaps have recently appeared in the coverage of certain types of international transactions in business and personal services and capital movements with the termination of foreign exchange control, as an analysis of foreign exchange transactions was employed for some of these items. Methods of covering some of these transactions have already been re-introduced, particularly through the use of schedules sent directly to principals in Canada. Many of these balance of payments transactions were covered by the Bureau in the interwar years by the direct use of questionnaires before the introduction of exchange control in 1939 made it possible to discontinue their use. Plans for filling some other of these temporary gaps have already been made. In the case of some gaps resulting from the loss of exchange data it will be more difficult to find substitutes. Many types of more sporadic international exchanges of services and capital movements are difficult to measure. This is particularly the case when transactions are diffused throughout the economy, especially when they pass through the hands of numerous individuals and small businesses. This kind of transaction was more readily measured when there was a thorough classification of most banking transactions through exchange control. In the absence of this source it is desirable to balance the need for information on some kinds of transaction against the cost and inconvenience to the public of collecting it. Discretion is required in judging the need for detailed information on some transactions where their general size may be estimated by indirect methods.

Uses of Statistics

The principal statistical products of the Division are basic elements in Canadian economic information and consequently have wide official and private uses. The uses extend from the general need for information on the balance of payments and international trade in the frame work of economic intelligence to more particular uses of series of figures for a multiplicity of purposes.

In a country like Canada where external transactions are a comparatively important part of economic activity there is close attention given to developments in foreign trade and the balance of payments by all who follow economic trends. Consequently these statistics are employed in a great variety of ways both inside and outside the Government, and in economic analysis generally.

These statistics are indispensable in many government considerations of economic, commercial, and financial policy. For example, in the White Papers appended to the annual Budget Speech of the Minister of Finance there is a section concerned

with the balance of payments. In the Budget Speech, attention is usually drawn to balance of payments developments and on some occasions the latter developments have given rise to government measures of a major type. Balance of payments statistics have also been published in the annual reports of the Foreign Exchange Control Board. These statistics have had a use in such considerations of policy as those concerned with foreign exchange control, and government loans to other countries as well as general financial policy. Trade and balance of payments statistics are also employed in general economic forecasting as well as in forecasting more specific trends. As statistics of the record are a necessary foundation to conjecture as to future trends, co-operation is given by the Division to officers in other departments responsible for forecasting, such as the Economic Division of the Department of Trade and Commerce, the Department of Finance, and the Bank of Canada.

Trade statistics are also, of course, indispensable in the promotion and development of international trade at home and abroad and have many uses of both a specific and general type. These statistics are used in the negotiation of trade agreements and in arriving at changes in the Customs tariff. They are also very much in demand by all types of official and private users interested in foreign trade. For example, special monthly tabulations showing trade with individual countries are supplied to all Canadian Government Trade Commissioners abroad and to most foreign government representatives in Canada. Special statements are also supplied monthly to about 500 private subscribers, including trade associations, manufacturers, and other business firms.

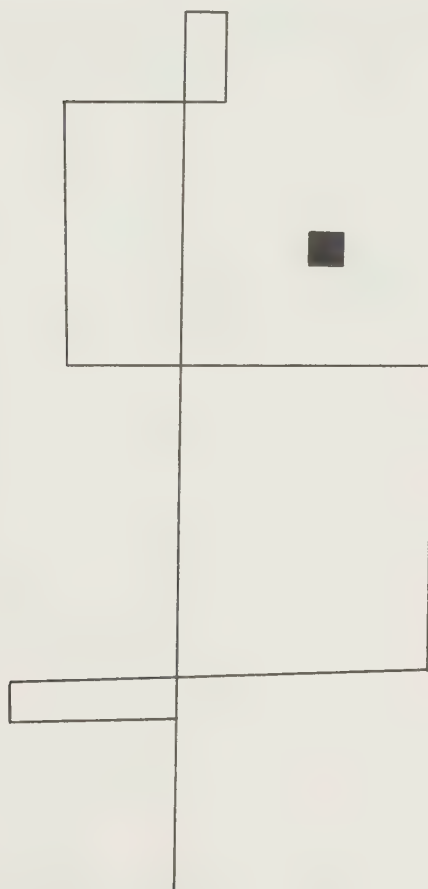
Data are supplied to various international organizations in many forms. Leading instances include the foreign trade statistics supplied on the basis of the Standard International Trade Classification to the United Nations Statistical Office and to the Organization for European Economic Co-operation, and balance of payments statistics supplied in special detail to the International Monetary Fund. These statistics are also used extensively in government submissions to international organizations arising out of Canadian participation.

Balance of payments data are also integral elements in the National Accounts. Statistics on international travel are in demand by government promotional and development agencies and private interests in the tourist trade. Financial institutions and others interested in investments are examples of private parties making particular use of statistics of the balance of payments and international investments. The statistics are also required in statements filed with the Securities and Exchange Commission by Canadian borrowers in the United States. Information in this field is also greatly in demand by graduate students in Canada and the United States.

Publications

Reports issued range from monthly bulletins and reports containing statistics only, to annual reports containing interpretation and analysis as well as detailed statistics. In all, there are some eight monthly bulletins and reports, six annual reports, three quarterly and semi-annual reports, and various special publications. There are monthly publications on foreign trade providing both summary statistics and detailed statistics on each of exports and imports. There are also monthly bulletins on travel between Canada and other countries. Quarterly reports on exports and imports are also issued showing details of commodity trade with individual countries. The monthly and quarterly reports on Foreign Trade are produced comparatively soon after the final tabulation of the statistics by

printing these off the machine runs rather than setting up type in the conventional manner. On an annual basis, the most comprehensive details on foreign trade are printed in the three volumes *Trade of Canada*, while textual comment, analysis and interpretation, along with summary statistics, appear in the *Review of Foreign Trade* which is both an annual and semi-annual publication. There are also annual reports on each of the Canadian Balance of International Payments, and Travel Between Canada and Other Countries which contain extensive textual comment and analysis as well as detailed statistics. Statistics of Canada's international investment position have been published in both annual and special reports on that subject and on the balance of payments. A detailed list of the publications of the Division is appended.



Number, Periodicity and Nature of Reports

Report	Number	Periodicity	Contents
Foreign Trade:			
Trade of Canada: Volume I	1	Annual	Summary, historical, and analytical tables. The only text is a description of the country classification and a few brief explanatory notes.
Volume II	1	Annual	Total domestic exports and re-exports to individual countries, and complete detail of domestic exports and re-exports of each commodity by countries.
Volume III	1	Annual	Total imports and* duty collected by individual countries, and complete detail of imports and duty collected for each commodity by countries.
Review of Foreign Trade	1	Semi-annual	Textual analysis of trade with all countries, leading countries and trading areas by principal commodities. Some textual description of Canadian trade statistics and price and volume indexes. Summary and analytical tables.
Exports of Canadian Produce and Foreign Produce	1	Monthly	Statistics for individual month and elapsed period of year of total domestic exports by countries, domestic exports of each commodity by countries, re-exports of each commodity, and export value, price and volume indexes, by groups.
Imports Entered for Consumption	1	Monthly	Statistics for individual month and elapsed period of year of total imports by countries, imports of each commodity by countries, and import value, price and volume indexes, by groups.
Articles Exported to Each Country	1	Quarterly	Statistics for elapsed period of current and preceding year of domestic exports to each country, with complete commodity detail.
Articles Imported from Each Country	1	Quarterly	Statistics for elapsed period of current and preceding year of imports from each country with complete commodity detail.
Domestic Exports	1	Monthly	First publication of summary data for month and elapsed period of year for domestic exports by countries and trading areas and by main groups and sub-groups of commodities.
Imports for Consumption	1	Monthly	First publication of summary data for month and elapsed period of year for imports by countries and trading areas and by main groups and sub-groups of commodities.
Monthly Summary of Foreign Trade	1	Monthly	Summary data for trade with all countries, the United States and the United Kingdom, and first publication of new gold production available for export and of export and import price and volume indexes.
Statistical Classification — Exports	1	Irregular	Full readings of all item titles distinguished in the statistics of exports, and an alphabetical index. (also available separately).
Statistical Classification — Imports	1	Irregular	Full readings of all item titles distinguished in the statistics of imports, with an unofficial summary of rates of duty applicable, and an alphabetical index. (also available separately).
International Balance of Payments:			
Canadian Balance of International Payments, 1926 to 1948	1	Special	Contains 83 tables and statements on balance of payments and international investments with 149 pages of comments on periods and methods.
Canadian Balance of International Payments	1	Annual	Contains summary of capital and current transactions between Canada and other countries, foreign investments in Canada and Canadian assets. Preliminary figures for latest year and final figures for previous year.
Sales and Purchases of Securities Between Canada and Other Countries	1	Monthly	Transactions in outstanding securities between Canada and U.K., U.S., and Other Countries. December issue contains an annual review.

DOMINION BUREAU OF STATISTICS
INTERNATIONAL TRADE DIVISION

Chart showing function
and organization

DOMINION BUREAU OF STATISTICS

INTERNATIONAL TRADE DIVISION

Responsible for the collection and analysis of Canadian statistical information in the fields of international trade and international finance. The staff of the Division numbers 131.

Director, C.D. Blyth, Statistician Grade 5

EXTERNAL TRADE SECTION

Responsible for the compilation and publication of foreign commodity trade. The staff of the Section numbers 93.

Chief, L.A. Kane, Statistician Grade 5

General Staff - 3

- 1 Statistician Grade 5
- 1 Stenographer Grade 3
- 1 Stenographer Grade 1

TRADE ANALYSIS UNIT

Analysis and interpretation of statistics of Canada's foreign trade.

Staff - 4

- 1 Statistician Grade 3
- 1 Statistician Grade 1
- 1 Clerk Grade 4
- 1 Clerk Grade 3

BALANCE OF PAYMENTS SECTION

Preparation of statistics on the Canadian balance of international payments and international indebtedness. The staff of the Section numbers 34. In addition, 10 extra clerks work for half the year on international travel statistics.

Chief, C.D. Blyth, Statistician Grade 8

General Staff - 4

- 1 Statistician Grade 5
- 1 Statistician Grade 4
- 1 Statistician Grade 3
- 1 Stenographer Grade 3

AUDIT

Staff - 5

- 1 Supervising Clerk
- 4 Principal Clerks

EXPORTS COMPILATION

Staff - 12

- 1 Head Clerk
- 1 Principal Clerk
- 2 Clerks Grade 4
- 6 Clerks Grade 3
- 2 Clerks Grade 2B

IMPORTS COMPILATION

Staff - 64

- 1 Chief Clerk
- 1 Supervising Clerk
- 3 Principal Clerks
- 18 Clerks Grade 4
- 20 Clerks Grade 3
- 7 Clerks Grade 2B
- 14 Clerks Grade 2A

PUBLICATIONS PREPARATION

Staff - 8

- 1 Head Clerk
- 1 Principal Clerk
- 3 Clerks Grade 3
- 2 Clerks Grade 2B
- 1 Clerk Grade 2A

BALANCE OF PAYMENTS AND CAPITAL MOVEMENTS

Staff - 4

- 1 Statistician Grade 1
- 1 Principal Clerk
- 1 Clerk Grade 4
- 1 Clerk Grade 3

RECORDS OF CORPORATIONS AND INTERNATIONAL INVESTMENTS

Staff - 3

- 1 Clerk Grade 4
- 2 Clerks Grade 2B

INTERNATIONAL TRAVEL

Staff - 32

- 1 Statistician Grade 1
- 1 Clerk Grade 4
- 2 Clerks Grade 3
- 4 Clerks Grade 2B
- 6 Clerks Grade 2A
- 7 Clerks Grade 1
- 1 Typist Grade 2B
- 10 Part time Clerks Grade 1

Number, Periodicity and Nature of Reports – Concluded

Report	Number	Periodicity	Contents
International Investments:			
Canada's International Investment Position, 1926 to 1949	1	Special	Detailed analysis of foreign investments in Canada and Canadian investments abroad.
United States Direct Investments in Canada	1	Special	Contains data on investments and special analysis of the operations of larger U.S. controlled concerns showing their comparative position in Canadian industry.
International Travel:			
Travel Between Canada and Other Countries	1	Annual	Analysis of number of travellers entering Canada and their expenditures by length of stay and method of travel. Also number and expenditures of Canadian travellers abroad.
Travel Between Canada and the United States	1	Monthly	Statistics of motor vehicles entering Canada across U.S. border and foreigners entering Canada and Canadians returning from U.S. by rail, bus, boat, and plane. December issue contains first estimates of international expenditures.
Volume of Highway Traffic Entering Canada on Travellers' Vehicle Permits	1	Monthly Memorandum	Preliminary to Travel Between Canada and the U.S.

DOMINION BUREAU OF STATISTICS

LABOUR AND PRICES DIVISION

Historical Background

Prices and employment were among the subjects to receive immediate attention after the Dominion Bureau of Statistics was established under the Statistics Act of 1918. The first Bureau report on prices dealt mainly with the period 1918-1922 and provided much information on wholesale and retail prices in those years. It has been possible, since that time, to establish wholesale price index numbers back to 1867 and retail price index numbers to 1913. Records of month-to-month fluctuations of employment in industrial establishments date from 1919. Separate staff units to produce these statistics of prices and employment were formed soon after the Bureau was established. The regular collection of adequate statistics on unemployment presented a very difficult objective toward which substantial progress has been made only within the last decade. The Unemployment Insurance Act of 1940 established a Federal Unemployment Insurance Commission to administer a nation-wide system of unemployment insurance and a national employment service. Both of the Commission's major activities necessitate the maintenance of administrative records providing much information of general value on the unemployment situation. Soon after the Unemployment Insurance Act was passed, a separate unit was formed in the Dominion Bureau of Statistics to compile material collected by the Unemployment Insurance Commission. The Commission requires many tabulations for purely administrative purposes, but much of its material is available for public statistical reports. The first report of this kind contained information on claims for unemployment insurance benefit in the period February to June, 1942.

The foregoing records have been singled out for special mention because of their direct bearing upon the present organization of the Labour and Prices Division. Statistics produced by this Division form only part of Canadian labour and price records. A number of other records will be referred to later, but special mention may be made here of the labour force surveys instituted in 1945, and conducted by the Bureau's Special Surveys Division. Four times each year these surveys provide records of the civilian non-institutional population 14 years of age and over, classified in various ways which include a distinction between persons with jobs and those without jobs and seeking work.

The Labour and Prices Division was formed in 1946 by the amalgamation of three large branches of the Bureau, together with a small central staff. The staff concerned with employment statistics became the Employment Section of the Division. In 1941, its monthly records from industrial establish-

ments had been expanded to include payroll data and, in 1944, man-hours were added. These permitted the calculation of weekly and hourly per capita earnings, payroll index numbers, and averages of hours worked. The operations of the Unemployment Insurance Section, formed in 1941, included from the beginning such records as statistics of the insured population, entitlement to benefit, benefit days paid, and also a 5 per cent actuarial sample providing a complete history of the individuals covered. In 1947, semi-annual reports on hirings and separations were introduced and, in 1949, statistics of placement activities of the employment offices of the Commission were transferred from the Labour Department to this Section. In recent years it has done extensive work on historical estimates of the labour force and prepares the summary analysis for labour force bulletins published by the Special Surveys Division. Work now done by the Prices Section represents a material expansion since wholesale and retail price index numbers were established in the early 1920's. This has been particularly marked in the field of cost-of-living statistics, but wholesale price index numbers have been developed considerably, and security price records are also maintained. A nucleus for the Central Staff was formed in 1946 to improve labour income estimation methods.

It will have been noted that each of the large divisional units antedate the creation of the Division. This move toward greater centralization was made to cope with the problems of integration and reconciliation as the volume of basic data increased.

The Current Situation

Most of the statistics processed by the three Sections are monthly records, although they also include some weekly, quarterly, and annual records. The diverse nature and sources of the data processed in the several Sections necessitate quite different patterns of organization, making it desirable to deal with organization Section by Section rather than topic by topic.

In general, labour and price statistics are horizontal in character. They cut across all fields of industry and most population groups. This produces integration problems related to statistical fields such as demography, agriculture, and other industries for which data on labour and prices must fit in with data on materials used, production, sales, etc. Other integration problems arise because labour and price statistics come from different sources. Employment data, for example, come from industrial establishments (monthly payroll records and annual censuses of industry); they come also from house-

holds (population censuses and labour force surveys); finally, the records of The Unemployment Insurance Commission yield annual figures of the insured population in addition to other monthly employment data collected semi-annually in the surveys of hirings and separations. Each of these records is superior to any other for at least one important purpose and none can be eliminated without considerable sacrifice in accuracy or scope, or increased operational costs. On the other hand, the possibility of confusion among users of statistics is obvious. The adoption of a Canadian standard industrial classification has lessened this risk materially, but there is a continuing need for assessing differences in employment totals and trends due to varying coverage, definitions, and collection methods. The same is true in varying degree of other labour and price statistics.

In addition to the statistics described in the statements on individual Sections, there are other important sources of data on labour and prices. The provinces of Canada produce minimum wage and industrial accident data related to the administration of minimum wage and workmen's compensation legislation. At the federal level, the Dominion Department of Labour compiles industrial disputes records and wage rate and conditions of work statistics, in order to facilitate its conciliation work. Within the Dominion Bureau of Statistics, the Census Division collects decennial and quinquennial data related to the labour force and the earnings of wage-earners in conjunction with population census data; the labour force survey records of the Special Surveys Division have already been mentioned; the Industry and Merchandising and several other Divisions collect data, mostly annual in character, to provide integrated records of the position of labour relative to the major fields of production and distribution of goods and services.

Separate statements on the organization of the Central Staff, Employment Section, Unemployment Insurance Section, and Prices Section follow. It will be noted that they have quite different problems to deal with, and consequently that their operational procedures differ considerably.

Central Staff

This small unit is comprised mainly of technical personnel capable of carrying out fairly difficult projects. It is concerned principally with annual labour income estimates and surveys of family expenditure and income. However, it has been planned to assist with research problems arising from the work of the various Sections of the Division. As the work outlined below becomes more fully developed, this staff can be used in assisting with problems of integration and reconciliation. This should lessen the strain upon the technical staff of the Sections now concentrating almost entirely upon the production of current records. It should also make possible a measure of flexibility in technical

staff utilization which will add to its breadth of experience, thus making it more valuable, and will also be beneficial to morale.

Annual labour income estimates are derived largely from annual wage and salary data collected by other Divisions of the Bureau. The principal problems concerned with the production of these estimates have to do with estimation techniques to fill relatively small conceptual gaps where actual wage and salary records do not exist. These gaps represent fields in which data collection costs would be out of proportion to the uses the data would serve. The work on labour income, therefore, is mainly concerned with the refinement of statistical techniques and the maintenance of adequate liaison with other Bureau Divisions.

The quality of both monthly and annual labour income estimates is considered to be good. Since labour income forms a large and fairly steady proportion of all personal income, monthly labour income estimates are a valuable indicator of short-run changes in total income and also can be used satisfactorily to produce preliminary annual figures. Labour income totals form an integral part of the national income estimates produced by the Research and Development Division.

Continuous small sample family expenditure surveys present a complex organization effort which is now in its initial stages. A Bureau committee makes recommendations to the Dominion Statistician regarding the general features of sample design, the data to be collected, and the analysis and publication of the data. This type of direction is desirable inasmuch as both the Research and Development and the Labour and Prices Divisions are concerned with survey results, while the actual collection of basic records from householders is carried out by the field staff of the Special Surveys Division. The Central Staff of Labour and Prices works out sample design detail, plans schedules and instructions, edits incoming records, prepares data tables from Mechanical Tabulation Division data summaries, and drafts reports for publication.

Material from the continuous small sample family expenditure surveys will be used to keep the Consumer Price Index budget up-to-date, and to improve expenditure estimates in the National Accounts. It should also prove useful to business analysts concerned with marketing problems.

Employment Section

The Employment Section deals with records of employment, payrolls, and hours of work from establishments in the major non-agricultural industries, exclusive of certain categories such as government, education, health, domestic and personal service. For reasons of economy in time and costs, the surveys are limited to establishments usually employing 15 persons and over. About 23,000

separate establishment reports are received each month and from these, tabulations are made by industry for the Dominion, the provinces, and metropolitan areas.

The data collected monthly are as follows:

1. Total number of wage-earners and salaried personnel receiving pay in the last pay periods in the month.
2. The number of women employed.
3. Amount of wages and salaries disbursed to employees in their last pay periods in the month, including cost-of-living, incentive and production bonuses, commissions, etc.
4. Number of wage-earners for whom the firm keeps record of hours actually worked (mainly hourly-rated wage-earners, or production workers).
5. Hours worked in the pay periods, plus hours of paid absence in the same periods for wage-earners listed in item 4.
6. Wages paid for services rendered in these hours.

An annual inquiry is made in October into the earnings and hours of men and women wage-earners and salaried employees in about 8,000 manufacturing establishments, with the following supplementary material obtained in annual rotation:

1. A distribution of men and women by specified classes of hours actually worked in the selected week, with their earnings.
2. A distribution of wage-earners and salaried personnel of each sex by specified classes of weekly earnings.
3. Segregation of statistics of weekly earnings and hours of general office and clerical workers, and executive and related workers.

Methods of Collecting the Basic Data

The monthly data are collected on postcard questionnaires mailed in window envelopes, to reach the respondents toward the end of each month. Provision is made for the entry of statistics for all commonly-used pay periods, enabling establishments to supply information readily for persons on their various payrolls. File copies of the monthly questionnaires are sent on request and addressed envelopes are supplied for the return of the monthly cards where desired.

The form for the annual inquiry into the earnings of men and women in manufacturing, with a file copy and a return envelope, is enclosed with the October questionnaire on employment and payrolls.

Methods of Obtaining the Co-operation of Respondents

With their first monthly questionnaire, establishments are sent a circular letter requesting co-operation, briefly outlining the material required, and stressing the importance of the data sought. Detailed directions for the completion of the questionnaires are given in bulletin form, to be retained for reference. To facilitate accumulation of data required in the annual survey of earnings and

hours, manufacturers are advised in September as to the material required in the annual questionnaire going forward in October.

Co-operative Arrangements

Practically all the basic data are obtained directly from industrial employers; exceptions include returns transmitted by the Government Employment and Payroll Section of the Public Finance and Transportation Division, and data from the chartered banks, consolidated by the Canadian Bankers' Association. The Unemployment Insurance Commission co-operates in furnishing monthly lists of new and defunct firms and the Department of Defence Production furnishes occasional information including data on contracts, and defence plants. Certain trade organizations periodically furnish information such as lists of new establishments and lines of products in their industries.

Special monthly tabulations are made for 13 Dominion and provincial agencies of government and business organizations. In addition, special data are prepared from time to time for departments of government, employers' associations, and other agencies. Considerable data respecting new firms, changes in industrial classification of establishments, etc., are also furnished to the Dominion Department of Labour.

Integration with Work of Other Bureau Divisions and Other Government Departments

The organization of the monthly surveys of employment, payrolls, and man-hours requires co-operation and integration of certain procedures with the work of several other Bureau Divisions. Much of the Section's work of building up its mailing list is done in close liaison with the General Assignments Division, which is responsible for the centralized search for new establishments in most industries. There is also a certain amount of integration with the work of the Central Index staff of the Industry and Merchandising Division. The graphotyping and addressographing work is done by the Office Services Section. The key punching and tabulation work of the Section's monthly and annual surveys is carried out by the Mechanical Tabulation Division. Certain processing operations of the annual inquiry into earnings and hours in manufacturing are performed by the Calculating Unit of the Mechanical Tabulation Division. Many of the more difficult cases of delinquent returns are dealt with by field staff members of the Special Surveys Division.

The Employment Section provides other Bureau Divisions with basic data required for special purposes. As previously noted, many special tabulations are prepared each month for other government departments in order that one central collecting agency may serve the needs of both the Dominion and Provincial Governments for current data on employment and payrolls.

Methods of Follow-up, Editing, and Compilation

In relation to the number of reporting establishments, the volume of follow-ups is small. When returns fall into arrears, a series of follow-up circulars is sent, followed if necessary by individual letters, telephone or telegraph requests, and finally by personal calls from the Bureau's field representatives. The follow-up work required in connection with the annual survey of earnings and hours in manufacturing is carefully co-ordinated with that of the monthly inquiry.

Primary editing consists of a preliminary screening combined with routine computations for each card and the sorting of cards in relation to industry and area codes. Obvious errors are detected at this time and changes in address, cases of liquidation, and seasonally inactive firms are also dealt with. The cards are then turned over to a final editing staff of which each member is responsible for the records of establishments in certain industries. The division of work on an industrial rather than a geographical basis facilitates acquisition of specialized knowledge of seasonal conditions, pay levels, etc., in particular industries.

The monthly statistics are tabulated from punch cards. Two cards are used. One contains the data on all employees, women workers, and payrolls; the other the data on man-hours, wage-earners, and weekly wages. The earlier tabulation of the employment and payrolls data allows extra time for receipt of revised figures on hours, etc., in which the incidence of error is higher than in the employment and payroll statistics.

The data are tabulated by industry, on a provincial basis, followed by industrial segregations for metropolitan areas, with the Canada tabulations run after verification of the provincial and city figures. The tabulated statistics are examined for mechanical errors, and for errors of interpretation, etc., which may have escaped detection in the editing, and then balanced. Finally, the necessary index numbers, averages, etc., are computed.

The editing and tabulation procedures followed in processing the data obtained in the annual inquiries on earnings and hours in manufacturing are similar to those outlined for the monthly surveys. Punch cards are also used in this survey and when frequency distributions are obtained, a separate card is punched for wage-earners and salaried employees in each class of hours or weekly earnings.

Statistical Gaps, Appraisal of Quality, and Program for Improvement

Assessments of their own products by producers of statistics are, of course, conditioned by operational experience and contacts with users of statistics. The statements under this heading are not exhaustive either for the Employment Section or for

the other Sections of the Division. Some of the more important gaps with respect to statistics of the Employment Section are set out below:

Gaps Within the Present Framework

1. It would be advantageous to have comparable monthly data on employment and payrolls for industries at present excluded from the monthly surveys, notably in the service category. For some of the excluded groups, certain statistics are available elsewhere in the Bureau but not always on a comparable basis.
2. At present, index numbers of employment and payrolls are not accompanied by monthly estimates of total employment and payrolls; as already stated, the surveys are generally limited to establishments having 15 employees and over, and there is inequality in industrial coverage. Actual employment totals for local areas and industry sub-groups would supplement labour force survey data under broader classification headings.
3. Another gap would be closed by the periodic preparation of separate statistics of earnings and hours for men and women in non-manufacturing industries which employ considerable proportions of women. These industries include trade, hotels and restaurants, and laundries, and would require annual surveys similar to those now made in manufacturing.

Gaps Outside the Present Framework

1. It would be useful to have weekly averages of gross earnings and "take-home" pay, which were not affected by changing proportions of men and women employees, and by changing proportions of occupational skills. However, the reporting of data in the form required for these figures would place a large additional burden upon employers and the data would be costly to process.
2. Information on employers' costs for "fringe benefits" has not been compiled for Canada. The problem of collecting such data has been studied at some length, and it is hoped that eventually some records may be collected, perhaps at annual intervals.
3. I.L.O. Convention 63, Article 10, calls for publication of separate statistics from establishments for adults and juveniles once every three years. To date, no information along these lines has been obtained in Canada, where the employment of children is restricted quite effectively by provincial school attendance laws and the provisions of the Federal Family Allowance Act.

Appraisal of Quality

The monthly and annual statistics of employment, hours, and earnings are regarded as acceptably fulfilling their primary function of providing substantial quantities of industry and area data on trends, levels, and distribution in non-agricultural industries. Requests for publication of a greater volume of statistics by area, and in finer industrial classifications, are frequent. The excellent co-operation generally accorded by employers, and

their widespread use of current survey results suggest that this group places reliance on the statistics of employment, earnings, and hours.

The greatest problem inherent in the present statistics is inequality in industrial coverage of total employment. It should be noted, however, that the geographical coverage is relatively even. One of the difficulties in overcoming this defect has been the absence of satisfactory material to serve as bench-marks against which coverage can be measured. The comparatively high costs of gathering adequate data from small establishments has also affected the quality of these figures. The two problems are related since small establishments are more prevalent in some industries than in others.

Certain other aspects of the statistics also cause some concern. One is the treatment to be accorded casual workers, and workers in industries such as logging, characterized by abnormally high rates of labour turnover. The treatment of hours of paid absence as hours worked has been questioned in some quarters, and it would be advantageous to have further information with regard to the importance of this factor. Still another problem is the effect of the year-end holidays with consequent absenteeism upon the monthly series. Since these relate to the last pay period in the month, showing the amounts paid on or about the first of the following month, certain of the data for January 1 are abnormal for the month as a whole. The problem is complicated by the marked seasonal changes taking place in Canadian industry during the winter, and by the fact that the monthly series include industries in which payment on a monthly basis at the end of the month is typical. Hence the collection of records for other periods, such as the mid-month, would produce a time-lag problem.

Program for Improvement

Improvement in the monthly employment and payrolls surveys will depend to a considerable extent upon the successful application of sampling in the field of data collection and more complete mechanization. Work on the application of a sampling design for the important manufacturing industry is now nearing completion and the ultimate objective is to apply sampling techniques to all industries covered. To be successful, sampling designs must preserve a large volume of industrial and geographical detail. The great virtue of establishment records of employment and earnings lies in the comparative economy with which industrial and geographical detail can be produced from them. Preservation of this detail, of course, necessitates very careful sample design.

First priority in the development of new data goes to statistics of "fringe benefit" costs to employers. This is a vague term applied to a wide range of cash and non-cash costs including such diverse items as pension plans, plant cafeterias, special merchandise discounts to employees, and various concessions in the form of time paid for

but not worked. The establishment of a uniform basis of reporting data covering all such items presents very serious difficulties which have not yet been solved.

Improvements of lesser magnitudes related to data processing, speedier publication, etc., are under continuous consideration, with valuable ideas frequently originating with the clerical staff involved.

Uses of Various Statistical Series

Employment indexes are used to measure changing levels of industrial activity throughout the country and are particularly valuable in analyses of situations in areas and industries. They are also studied in connection with a variety of problems, e.g., contemplated changes in taxation and tariffs, pockets of unemployment, the forecasting of trends, and in estimating production according to geographic area and industry. Per capita earnings and payroll index numbers are also used for many purposes, including estimates of monthly labour income, and adjustment of pay levels of military and government civilian staff. Welfare workers use earnings statistics in planning charity drives, and for other purposes. Both employment and earnings data are used by technical school and other advisers in vocational guidance work.

In industry, the statistics are widely used in the negotiation of wage agreements, and in conciliation proceedings. Cost accountants use earnings data to estimate costs of work to be performed, and of products bought and sold. They are valuable as a measurement of the volume of purchasing power currently available when planning sales and advertising campaigns in various areas, also for implementing escalator clauses in long-term contracts for manufactured products and in construction contracts. These statistics are used by credit organizations as a factor in assessing the margin of safety in instalment buying. They are valuable to manufacturers planning production schedules as indicative of changes in the probable market for consumers' goods.

Organizations selecting sites for new establishments examine the monthly and annual reports as indicative of the types and skills of labour likely to be found in particular areas, probable labour costs, and the prevailing hours of work. Employers in the same and different areas and industries measure the experience in their establishments against the general levels of employment, hours, and earnings.

Unemployment Insurance Statistics Section

The Unemployment Insurance Statistics Section is responsible primarily for statistics emanating from the operations of the Unemployment Insurance Commission. The Commission administers the

Unemployment Insurance Act which covers some 3,000,000 of the 3,700,000 paid workers in Canada, and operates the National Employment Service—a nation-wide free public employment service. From the records of the Unemployment Insurance Commission comes a great deal of information on the individuals with whom contact is maintained either as contributors, claimants, or applicants for employment, as well as data on employers both as contributors and holders of job vacancies.

In organizing Unemployment Insurance Statistics, it was felt that three main interests must be served:

1. The operational requirements of the Unemployment Insurance Commission. The Commission maintains some 180 local offices and 5 regional offices as well as the head office in Ottawa. Statistical data which measure the work load in various units and at stages in the processing of cases, as well as the effectiveness of different procedures are obviously essential.
2. More general requirements for information on employment and unemployment. The Unemployment Insurance Commission, other departments of the Federal Government, Provincial Governments, business firms and organizations, labour organizations, and many others, require general information on the state of the labour market for different areas, industries, occupations, and special groups. The statistics are designed to answer, as completely as coverage and similar considerations permit, such requirements.
3. The requirements of the actuaries and of the Unemployment Insurance Advisory Committee in investigating the state of the Unemployment Insurance fund. In addition, data are required to assist in assessing the effect on the fund of proposals to change benefit rates, contribution rates, or conditions for the receipt of benefit.

Methods of Collecting the Basic Data

The basic data are all collected through the Unemployment Insurance Commission. The main problem is to determine the point in the Commission's procedures at which complete and accurate information on the desired subject can be obtained. In some cases (such as the weekly reports on employment operations by industry and the monthly reports on claims) special report forms are completed in local offices of the Commission and forwarded to the Bureau. In other instances, reports are received only from the five regional offices (e.g., contribution data for the Actuarial Sample) or the five District Treasury Officers (e.g., monthly reports on benefit payments). Wherever possible, the preparation of statistical schedules by the offices is avoided through the use of basic documents which are prepared originally for administration and then sent to the Bureau for statistical purposes (e.g., benefit years established, benefit years terminated, benefit data for the Actuarial Sample).

In addition to the collection of material from the Commission's records, some data are obtained from establishments having one or more insured em-

ployees. Examples are the returns in connection with the annual renewal of insurance books when cards are completed for a 10 per cent sample of the insured population providing the name, insurance number, sex, year of birth, occupation, and industry of each person having an insurance number ending in 4; and the semi-annual report on Hirings and Separations for which, twice a year, establishments having ten or more employees and all establishments of chain and multiple firms provide monthly data on numbers employed, hired, and separated, by sex. In these cases the Unemployment Insurance Commission collects the forms and sends them to the Bureau for processing.

Co-operative Arrangements

The Unemployment Insurance Statistics Section is, in effect, the statistical branch of the Unemployment Insurance Commission organization. Thus, the staff engaged on the statistical work must maintain constant liaison with the staff of the Commission and each must be conversant with the other's objectives and policies. Whenever an administrative procedure is being reviewed by the Commission, the Bureau is consulted on the statistical aspects of the proposed changes. In this way, adequate continuity is maintained in the statistical records despite quite drastic changes in procedure. The Commission is, of course, consulted on any contemplated change in statistical procedures so that the results can be designed most advantageously for administrative as well as other purposes.

Methods of Obtaining the Co-operation of Respondents

The Bureau provides the Unemployment Insurance Commission with a general statistical service that is not confined to the compilation and publication of Unemployment Insurance Statistics. Through standardization of techniques, procedures, and classification systems within the Bureau, material available from other sources can be used either alone or in conjunction with statistics from Unemployment Insurance Commission operations in connection with investigations of matters affecting the Commission's operations. In many cases such analyses have provided data which have made it unnecessary for the Commission to undertake special surveys. Such a service can be maintained only if there is confidence and sincere co-operation on both sides. Since this is realized there have been few, if any, cases in which the Commission has objected to furnishing basic information.

Methods of Follow-up, Editing, and Compilation

The Commission maintains a regional statistician in each of its five regional offices. The regional statisticians are responsible, under the Regional Superintendents, for the prompt and accurate completion and dispatch of all statistical returns in accordance with instructions from head office. Thus, all such returns from local and regional

offices are channelled through the regional statisticians who maintain check lists and follow up delinquent returns. These officers are also responsible for preliminary checking for internal consistency in each form and in some cases where administrative considerations make it advisable to have regional summaries as quickly as possible, they compile the reports for the region.

When statistics reflect the operations of an administrative organization they must have consistency in terms of the Act being administered and the procedures adopted for carrying out its terms. Thus, the returns are checked further in the Bureau and all compilations are examined for consistency. Queries and apparent discrepancies are brought to the attention of the regional statistician (often through the appropriate official at Head Office) who checks with the regional or local officials concerned. In this way, the regional statistician is constantly aware of instances in which the instructions are not being followed or are not fully understood in the field.

The Commission's Head Office is, of course, responsible for the framing and issuance of instructions on the completion of statistical returns. In formulating such instructions and in following up apparent inaccuracies or omissions, the Bureau officials and the Head Office officials concerned co-operate, but only in special circumstances does the Bureau contact regional or local office officials directly. In all cases the Head Office and Bureau officials keep one another informed of action contemplated in connection with follow-up or amendment of instructions.

Methods of compilation vary according to the nature of the material and of the desired result. In cases where extensive cross-classification is required and data are collected separately for large numbers of individuals, obviously, punch cards provide the most effective compilation medium. In this connection it is of interest to contrast the methods used in the three main projects using punch cards.

For statistics of the insured population the basic schedule is a punch card having a pre-printed stub on which either the employer or the local office staff enters the required information. The card can be completed in the Bureau either by mark-sensing or by punching, whichever is preferred in the light of available resources.

For benefit statistics a document is received from the Unemployment Insurance Commission for each benefit year established. (The document is prepared as part of the claims procedure and a carbon copy made for statistical purposes). When the benefit year terminates another document is sent to the Bureau and matched with the original punch card which is then completed with respect to benefit days paid and days remaining (if any).

The Actuarial Sample is a continuous 5 per cent sample of insured persons which accumulates, year by year, the complete employment and unemployment

history of the individuals covered. Primary data received from five sources are punched separately and then assembled mechanically, along with cumulative data from the preceding cards, on two master cards for each individual each year (one for contribution days and one for non-contribution days).

Peg board compilation has been adopted as most efficient and economical in cases where local offices or employers complete a form designed for statistical purposes. In these cases much of the classification required is provided on the schedule and the compilation procedure consists mainly in securing group totals. This is true for the weekly and monthly statistical returns as well as the semi-annual report on Hirings and Separations.

Uses of Various Statistical Series

All of the statistics produced are used by the Unemployment Insurance Commission either as a measure of performance or in assessing the probable results of contemplated policies. In addition, much of the material on Unemployment Insurance is used by the actuaries to investigate the financial basis of the scheme and, in fact, the Actuarial Sample tabulations are designed for that purpose. Labour organizations and employers, who contribute to Unemployment Insurance, maintain a continuing interest in its operations and use the statistical reports in evaluating the program and preparing briefs suggesting amendments.

Certain series (mainly those on applications for employment on hand and ordinary claimants on the live unemployment register) are widely used as indicators of changes in employment conditions. These are particularly valuable in that they are available frequently for local office areas. Since they originate with administrative operations they must be interpreted in terms of coverage provisions and office regulations and are therefore not precise measures of the current level of "unemployment". They do, however, form an important part of current quantitative information on the labour market and as such are indispensable tools for the analysis of the current employment situation.

Benefit statistics provide detailed information on the personal characteristics and the severity of compensated unemployment among insured persons in a year.

Annual data on the number of insured persons by occupation are the only current information on numbers employed by detailed occupation classes and are therefore requested and used for purposes of manpower analysis, planning for apprenticeship programs, and other purposes requiring occupational data.

Statistics of unfilled vacancies by occupation and by industry provide the only quantitative data available on labour demand.

Hiring and separation rates by industry and area provide a yardstick against which individual establishments can measure their record of labour turn-

over. Most of the larger firms in Canada have requested this information for their particular industries.

Prices Section

The operations of the Prices Section include the collection, calculation, and publication of price statistics in the fields of retail, wholesale, international, farm, and security prices. With the exception of the international field, which serves a purely administrative purpose, the objective of the Section is to provide government, labour, business, and the public with a comprehensive coverage of price indexes and actual price data. While the emphasis is on the production of index numbers, particularly consumer price index numbers, the demand for actual prices is very great, and tabulated prices form an important part of the Section's output.

Methods of Collecting the Basic Data

As methods of collecting basic data vary considerably from one price field to another, it is convenient to consider each one separately:

Retail Prices.— Several methods are used in collecting retail price data for use in cost-of-living and consumer price index calculations. The most important is personal collection by field representatives.

Field agents are located in fourteen large cities across Canada, in eight of which full-time representatives collect all the price data required from their respective cities. Clothing and home-furnishings are priced only in cities where there are full-time field representatives who have received special training for this work. In six other cities, part-time field representatives collect prices for most other commodities and services. All additional retail data are obtained from respondents by mail.

Detecting and assessing quality changes in merchandise is the most difficult part of the field representatives' work. Commodity specifications have been developed on the basis of visits to manufacturers and interviews with retail distributors. They are revised from time to time to keep pace with changes in manufacturing methods, materials, and consumer buying habits. Field representatives report regarding the availability of the different commodities, as specified, in their respective cities. In pricing clothing and home-furnishings, buyers and managers in department stores are consulted extensively.

Wholesale Prices.— The principal sources of wholesale prices are industrial firms and government agencies with direct market contacts. In two instances only are trade journals utilized for actual prices. The majority of prices are collected by mail and the pricing date specified

on most reporting forms is the 15th of the month. Depending upon the sensitivity of commodity markets, some prices are collected at less than monthly intervals, and others at greater than monthly intervals. Where printed price lists of the required data are available, the Prices Section is placed on the firm's mailing list to receive new price lists as issued. In some cases, these are supplementary to a regular monthly schedule.

Over 500 industrial firms receive schedules at the 15th of each month requesting mid-month wholesale prices for selected commodities of specified descriptions. Stencilled schedules are employed, on which the previous month's prices are typed. These are enclosed in window envelopes with a form letter and a post-free return envelope. Most firms require an individual schedule, even where the same commodities are priced, since exact descriptions and bases of quoting vary from firm to firm. Before a schedule is adopted, the firm is asked to approve or amend a draft copy. Also, before a schedule is re-stencilled, a letter is sent to the firm asking if improvements can be suggested.

Prices Paid by Farmers.— Price index numbers of commodities and services used by farmers are computed for January, April, and August. Accordingly, most of the items in the index are priced in these months by direct mail questionnaires sent to retail distributors serving farm communities. However, considerable use is made of mail-order catalogues and implement company price lists.

Wage rate, mortgage interest rate, and tax rate indexes are derived from farm crop correspondent returns collected by the Agriculture Division of the Bureau. Wage rates are reported three times a year while mortgage rates are collected annually. Tax rate data come from a special schedule sent to over 3,000 farm correspondents of the Agriculture Division.

Security Prices.— The basic material for price index numbers of industrial, utility, bank and mining common stocks and preferred stocks, is taken from Montreal and Toronto Stock Exchange quotations as published in daily newspapers. Printed reports issued by the two exchanges are also used to supplement and check the information obtained in daily papers.

Co-operative Arrangements

Co-operative arrangements relating to price collection exist with one province only. Close contact is maintained with a large number of trade associations which are most co-operative in assisting with price collection. Constant liaison is maintained with the staffs of several Federal Government departments and agencies whose activities are affected by movements of prices. Members of these staffs study section price records in great detail and contribute useful suggestions as well as much valuable market information. Staffs of several Federal Government departments

report prices from posts abroad and these are used to calculate living allowance indexes for the respective posts. This work has been extended materially in the postwar period after considerable experimentation.

Methods of Obtaining the Co-operation of Respondents

Assurance is given to prospective respondents that data provided will, in accordance with the Statistics Act, be used only for statistical purposes in such a form that individual price data cannot be identified. Usually the need for the data is explained. Initial contact is made either by letter or through a field representative. Prices are collected on a voluntary basis and special attention is given to any possible return service which can be offered to respondents.

Field representatives are chosen in part for their ability to maintain good public relations and they are instructed to collect prices with a minimum of inconvenience and effort to the respondent. Whether the collection is made by mail or personal visit, schedules are made as attractive and easy to complete as possible. Response is improved by good schedule format.

Integration with Work of Other Bureau Divisions

The work of the Section is most closely allied with three other Bureau Divisions – the Research and Development Division, Agriculture Division, and Special Surveys Division.

Price indexes are used extensively in the deflation of National Accounts. The similarity of the index of Canadian Farm Products wholesale prices, as produced by the Prices Section, and the index of Farm Prices of Agricultural Products, as produced by the Agriculture Division is such, from a conceptual point of view, that close liaison must be maintained. The Special Surveys Division is responsible for all the field work of the Bureau, and thus the collection of price data by members of this Division is of basic concern to the Prices Section. At both the working and administrative levels, close liaison is maintained with these Divisions.

Methods of Follow-up, Editing, and Compilation

The majority of mid-month schedules are usually returned within a week. Around the 25th of each month, follow-up letters are sent with duplicate schedules to firms who have not reported by that date. When this does not bring results, a special letter is written to the firm, or, in areas where there is a regional office, a personal visit is made.

The general compilation procedure followed in all index calculation is, first, the transcription of prices directly from the schedules to work sheets. Then simple or weighted arithmetic averages are obtained. Prices are translated into price relatives, when value ratios are used as

weights, while in other cases quantity or factor weights are applied directly to the price averages. For the most part, sub-group indexes are obtained at fairly small commodity group levels, e.g., men's clothing, women's clothing, footwear and piece goods in the case of the retail clothing index. These sub-group indexes are then weighted to produce group indexes, and the process is repeated at the group index level to produce the final index.

Index numbers are computed by means of calculating and adding machines. The use of peg board and comptometer is being considered for some groups of data.

Statistical Gaps, Appraisal of Quality, and Program for Improvement

The quality of price indexes tends to deteriorate as weighting patterns become less representative of current situations; consequently, periodic revisions are necessary. For example, the revision of the Bureau's basic cost-of-living measurement has constituted a major project of the Division during the past two years. The resultant Consumer Price Index presented both organizational and technical problems of considerable magnitude. The first stage in the project was a survey conducted in 1948 and 1949 to secure data for a post-war index budget. A nation-wide sampling inquiry conducted by the Special Surveys Division provided the family expenditure data necessary for analysis to determine (a) the characteristics of the families represented by the index, (b) the list of items in the new family budget, and (c) a complete budget weighting pattern, including a comprehensive basis of weight imputation for items not directly represented in the budget list. The survey also provided most of the data required to cope with technical problems such as seasonality in food consumption and measurement of the changes in prices which affect home ownership costs.

While this work was being done, other aspects of index construction including price collection and calculation procedures were being reviewed with an eye to increasing the accuracy of basic price data and improving processing and computational methods. Then a description of the new index was drafted and discussed at length in a series of meetings with representatives of many organizations and groups. These meetings produced constructive comments from labour and management, various interested groups such as consumers, agriculturists, independent economists, and technical experts of Canadian government departments as well as others engaged in constructing price index numbers for other countries. Following these discussions, actual index construction was commenced. The final index plan necessitated a more adequate field staff to increase the volume and accuracy of price data required, also a moderately larger office staff to process the greater volume of price data. Maintaining a reasonable balance between production costs on the one hand, and

a satisfactory level of accuracy on the other, is not the least among problems faced by the statistician. The extended use of price index numbers and other statistics in formulating policy related to the disposition of large sums of money by industry and governments has subjected these statistics to much higher standards of critical judgment in recent years. The new Consumer Price Index represents a major improvement. Its weighting pattern is up-to-date; its budget is more comprehensive; and it is superior from the point of view of index number technique.

A revision of the general wholesale price index is also needed. Although the present wholesale index includes 600 price series, it is deficient in representation of highly manufactured commodities such as capital equipment, and the chief component material basis of classification is unsatisfactory. Both of these aspects of the wholesale index will be improved during the next revision of this series.

The farm cost-of-living index is not as comprehensive in either commodity coverage or price sample as is the urban consumer price index. A revision of this series and of security price index numbers is required.

The Prices Section publishes index number counterparts of all major price series issued by governmental statistical agencies elsewhere, although as noted above, there is considerable room for qualitative improvement in some of the series. There is also need for a great deal of study and experimentation regarding useful additional series in the wholesale and retail commodity price fields. This is particularly true of wholesale prices. Violent price movements of the past decade have underscored the importance of a wide range of deflators in the analysis of dollar aggregates such as those related to production, trade, inventories, and national income. In the retail price and cost-of-living field there is an increasing demand for price index numbers for different spending unit types, and for families at different income levels. There has been growing concern also with interspatial differences in retail price levels by nation-wide organizations concerned with equitable wage scales.

Uses of Various Indexes

There is a variety of uses for each of the indexes produced by the Prices Section. One of the most important uses, analysis of economic

conditions is, of course, common to all of them. Some of the other more important uses are listed below:

Consumer Price Index

1. Negotiation and escalation of salaries and wages.
2. Adjustments of contracts of many kinds where retail prices affect cost involved.
3. Deflation of the consumer expenditure components of the National Accounts involves basic data from the Consumer Price Index.
4. Inventory evaluation on a constant dollar basis.

Wholesale Price Indexes

1. To provide a reference level against which to observe the behaviour of particular price groups.
2. Component indexes and individual price series have numerous uses for both government and business analysis, e.g., studies of replacement and construction costs in investment projects; analysis of price movements of both individual items and commodity groups in relation to purchases and sales; industrial planning, market analysis and studies of changes in physical volume.

Price Indexes of Commodities and Services used by Farmers

The principal use of this index is concerned with the analysis of prices paid by farmers as compared with prices received by farmers. Price movements of individual agricultural commodities are compared with the fluctuations in the general level of prices paid by farmers.

Price Index Numbers of Securities

To provide historical records and bench-marks against which to relate the price movements of individual common and preferred stocks.

Comparative International Price Indexes for Government Posts Abroad

To adjust allowances of Canadian personnel serving abroad.

Number, Periodicity and Nature of Reports

Report	Number	Periodicity	Contents
Employment and Earnings:			
Annual Review of Employment and Payrolls	1	Annual	Monthly and annual indexes of employment and payrolls for industries, provinces and cities, with average weekly wages and salaries; recent and long-term comparisons; charts; text; explanatory notes.
Annual Review of Man-hours and Hourly Earnings	1	Annual	Monthly and annual averages of hours worked per week, hourly and weekly earnings of hourly-rated wage-earners by industry and area, with comparisons from earlier periods; charts; text; explanatory notes.
Annual Survey of Earnings and Hours in Manufacturing-Preliminary Statement	1	Annual	Preliminary industrial and area statistics of average earnings and hours of men and women employed as wage-earners and salaried staff in last week in October.
Earnings and Hours of Work in Manufacturing	1	Annual	Industry and area averages of earnings and hours of men and women employed as wage-earners and salaried staff in last week in October, with comparisons from earlier annual surveys; charts; text.
Advance Statement on Employment and Weekly Earnings	1	Monthly	Preliminary industrial composite indexes of employment and payrolls, Canada and provinces, with average weekly earnings, current figures, with data for a month and a year earlier; brief comments.
Employment and Payrolls	1	Monthly	Industrial, provincial and city indexes of employment and payrolls, and average weekly wages and salaries, with comparative data for earlier periods: area, industry and sex distributions of employees currently reported; charts; text; explanatory notes.
Man-hours and Hourly Earnings	1	Monthly	Industrial, provincial and city averages of hours worked per week, and hourly and weekly earnings of hourly-rated wage-earners, with comparisons from earlier periods; industrial and area distribution of reported wage-earners; charts; texts; explanatory notes.
Unemployment Insurance:			
Annual Report on Benefit Years Established and Terminated under the Unemployment Insurance Act	1	Annual	Provides detailed tables regarding the personal classification of those establishing benefit years and the benefit days paid to them.
Special Tabulation of Unemployment Insurance Benefit Statistics Prepared for the Meetings of Unemployment Insurance Advisory Committee	1	Annual (Restricted Distribution)	A preliminary presentation of data contained on the above annual report.
Annual Summary Report on Operation of Local Employment Offices, Unemployment Insurance Commission	1	Annual (Restricted Distribution)	A statistical summary of the year's operation for each local office and for regions and provinces.
Hiring and Separation Rates in Certain Industries	1	Semi-annual	Gross labour turnover rates by industry, region, and sex for each month.

DOMINION BUREAU OF STATISTICS
LABOUR AND PRICES DIVISION

Chart showing function
and organization

DOMINION BUREAU OF STATISTICS

LABOUR AND PRICES DIVISION

Principal responsibilities include the following: collection and publication of monthly statistics on employment, earnings and hours worked as reported by industrial establishments; production of statistics from Unemployment Insurance Commission operational records for special administrative and general uses; collection and publication of prices and price index numbers; the preparation of labour income estimates and the analyses of continuous family expenditure surveys. The staff of the Division numbers 180.

Director, H.F. Greenway, Economist Grade 9

Assistant Director, N.L. McKellar, Statistician Grade 6

Central Staff - 8

- 1 Statistician Grade 3
- 2 Technical Officers Grade 3
- 1 Technical Officer Grade 1
- 1 Clerk Grade 4

- 1 Stenographer Grade 3
- 1 Clerk Grade 3
- 1 Clerk Grade 2A

EMPLOYMENT SECTION

Index numbers of non-agricultural employment and payrolls; per capita figures of earnings and hours worked; annual surveys of manufacturing providing supplementary data on earnings and hours worked. The staff of the Section numbers 50.

Chief, Miss M.E.K. Roughedge, Statistician Grade 5

General Staff - 14

- 1 Statistician Grade 3
- 1 Clerk Grade 4
- 1 Clerk Grade 3
- 2 Clerks Grade 2B
- 1 Clerk Grade 1
- 1 Stenographer Grade 2B
- 2 Stenographers Grade 2A
- 1 Typist Grade 2B
- 4 Typists Grade 2A

UNEMPLOYMENT INSURANCE SECTION

Tabulation of unemployment insurance data and preparation of weekly, monthly and annual reports. Special projects and studies for the Unemployment Insurance Commission and the Department of Insurance. The staff of the Section numbers 68.

Chief, N.L. McKellar, Statistician Grade 6

General Staff - 7

- 1 Statistician Grade 3
- 1 Statistician Grade 2
- 1 Head Clerk
- 1 Principal Clerk
- 1 Typist Grade 3
- 1 Typist Grade 2A
- 1 Typist Grade 1

PRICES SECTION

Index numbers and price averages of retail, wholesale, farm, international, and security prices. Indexes of prices paid by urban and farm families. The staff of the Section numbers 53.

Chief, L.E. Rowbottom, Statistician Grade 4

General Staff - 10

- 1 Technical Officer Grade 4
- 1 Commodity Officer
- 2 Statisticians Grade 1
- 1 Principal Clerk
- 1 Clerk Grade 3
- 1 Stenographer Grade 2B
- 1 Clerk Grade 2A
- 1 Stenographer Grade 1
- 1 Typist Grade 1

STATISTICAL AND SPECIAL PROJECTS UNIT

Publications: statistical projects and special studies; technical correspondence.

Staff - 9

- 1 Statistician Grade 2
- 2 Technical Officers Grade 1
- 1 Clerk Grade 4
- 2 Clerks Grade 3
- 3 Clerks Grade 2B

Mechanical Equipment:
5 Calculators

EDITING UNIT

Editing and preparing material for publication; verifying tabulated data; preparing index numbers, etc.

Staff - 13

- Supervisor, Principal Clerk
- 6 Clerks Grade 3
- 3 Clerks Grade 2B
- 3 Clerks Grade 2A

Mechanical Equipment:
2 Calculators
4 Adding Machines

CLERICAL SERVICE UNIT

Initial processing of monthly and annual questionnaires; computations and other general clerical work.

Staff - 13

- Supervisor, Clerk Grade 4
- 4 Clerks Grade 2B
- 8 Clerks Grade 2A

Mechanical Equipment:
12 Calculators
2 Adding Machines

ACTUARIAL SAMPLE UNIT

Maintain complete work history of 5 percent sample of insured population.

Staff - 8

- Supervisor, Clerk Grade 4
- 2 Clerks Grade 3
- 2 Clerks Grade 2B
- 1 Clerk Grade 2A
- 2 Clerks Grade 1

Mechanical Equipment:
2 I.B.M. Posting Machines
1 Microfilm Reader
1 Recordak Projector
1 Adding Machine

PLACEMENT STATISTICS UNIT

Placement statistics, statistics of the insured population.

Staff - 12

- Supervisor, Principal Clerk
- 1 Technician Grade 1
- 1 Clerk Grade 4
- 4 Clerks Grade 3
- 2 Clerks Grade 2B
- 3 Clerks Grade 2A

Mechanical Equipment:
5 Adding Machines
3 Comptometers
1 Calculator

DOCUMENT RECEPTION UNIT

Reception, filing and distribution of material; microfilming.

Staff - 2

- Supervisor, Clerk Grade 3
- 1 Clerk Grade 2A

Mechanical Equipment:
1 Comptometer

BENEFIT STATISTICS UNIT

Benefit statistics, occupation and industry coding, hirings and separations survey.

Staff - 26

- Supervisor, Principal Clerk
- 1 Clerk Grade 4
- 2 Clerks Grade 3
- 4 Clerks Grade 2B
- 13 Clerks Grade 2A
- 5 Clerks Grade 1

Mechanical Equipment:
1 Adding Machine

FINAL TABLES UNIT

Compilation, checking final tables.

Staff - 12

- Supervisor, Clerk Grade 4
- 2 Clerks Grade 3
- 3 Clerks Grade 2B
- 1 Office Appliance Operator Grade 2B
- 3 Clerks Grade 2A
- 2 Office Appliance Operators Grade 2A

Mechanical Equipment:
3 Calculators
3 Comptometers
6 Adding Machines

CONSUMER PRICE UNIT

Calculation of the monthly official Dominion Urban Consumer Price Index; this includes control over the technical aspects of price collection by field agents and mail.

Staff - 24

- Supervisor, Statistician Grade 2
- 1 Supervisory Clerk
- 1 Principal Clerk
- 1 Clerk Grade 4
- 7 Clerks Grade 3
- 3 Clerks Grade 2B
- 10 Clerks Grade 2A

Mechanical Equipment:
10 Calculators
3 Adding Machines

WHOLESALE AND SECURITY PRICE UNIT

Collection of wholesale prices and calculation of monthly and weekly indexes, including general wholesale index and special purpose series such as industrial materials, Canadian farm products, and construction materials; weekly and monthly indexes for common stocks, preferred stocks and bond yields are prepared.

Staff - 9

- Supervisor, Statistician Grade 2
- 1 Principal Clerk
- 4 Clerks Grade 3
- 1 Clerk Grade 2B
- 2 Clerks Grade 2A

Mechanical Equipment:
4 Calculators
2 Adding Machines

PRICES PAID BY FARMERS UNIT

Collection of prices and calculation thrice yearly of indexes of commodities and services used by farmers.

Staff - 4

- Supervisor, Statistician Grade 2
- 1 Clerk Grade 4
- 1 Clerk Grade 2B
- 1 Clerk Grade 2A

Mechanical Equipment:
2 Calculators

INTERNATIONAL LIVING COSTS UNIT

Collection of prices and calculation of indexes for comparisons of international living cost differentials in Canadian Government posts abroad.

Staff - 5

- Supervisor, Statistician Grade 4
- 1 Clerk Grade 4
- 1 Clerk Grade 2B
- 2 Clerks Grade 2A

Mechanical Equipment:
3 Calculators
1 Comptometer

Number, Periodicity and Nature of Reports – Concluded

Report	Number	Periodicity	Contents
Unemployment Insurance – Concluded:			
Male and Female Unplaced Applicants by Age Group and by Local Employment Offices, Unemployment Insurance Commission with Unfilled Vacancies	1	Quarterly (Restricted Distribution)	Summary of age distribution of unplaced applicants by sex.
Statistical Report on the Operation of the Unemployment Insurance Act	1	Monthly (Restricted Distribution)	Presents tables on claims filed, live claims, benefit days, and amount paid.
Special Monthly Tabulation of Benefit Years Established and Terminated Under the Unemployment Insurance Act	1	Monthly	Contains detailed data on benefit years established and terminated in the month.
Labour Demand and Supply	1	Monthly (Restricted Distribution)	Unfilled vacancies by industry and occupation and unplaced applicants by occupation.
Summary Report on Placement Operations of Local Employment Offices, Unemployment Insurance Commission	1	Monthly (Restricted Distribution)	Summary of placement operations of employment offices.
Special Placements of Handicapped Persons	1	Monthly (Restricted Distribution)	Placement operations as related to handicapped persons.
Male Unfilled Vacancies and Unplaced Applicants in Construction Occupations in Selected Local Office Areas	1	Monthly (Restricted Distribution)	Summary of male vacancies and applications in the construction industry.
Advance Report on Labour Demand and Supply	1	Weekly (Restricted Distribution)	Summary of placements, vacancies, and applications on hand, by region.
Weekly Labour Report from all Local Employment Offices, Unemployment Insurance Commission	1	Weekly (Restricted Distribution)	Same as above, except for all employment offices.
Prices:			
Prices and Price Indexes	1	Annual	Historical records of price indexes; single commodity prices and price relatives.
Price Index Number of Commodities and Services Used by Farmers	1	Thrice Yearly	Price indexes of commodities and services used by farmers.
Price Movements (Preliminary)	1	Monthly	First release of the Consumer Price Index, special group wholesale indexes and security price indexes.
Prices and Price Indexes	1	Monthly	Principal indexes of wholesale, retail, and security prices. Price averages, price indexes of other countries, rates of exchange, and Dominion bond yields.
Labour Income:			
Estimates of Labour Income	1	Monthly	Estimates of total labour income with broad industrial group sub-totals.

DOMINION BUREAU OF STATISTICS

PUBLIC FINANCE AND TRANSPORTATION DIVISION

The work of the Public Finance and Transportation Division centers mainly on the two major fields of public (government) finance and transportation statistics. In addition, it is responsible for the organization of government employment and payroll statistics and for statistics of various public utilities the operations of which are directly or closely related to government and transport operations in the utility fields, or for which the government or transport sector is an important part of the whole.

In Canada there are three levels of government — federal, provincial, and municipal. The ten Provincial Governments have complete responsibility and control over municipal or local government affairs. Within each of the provinces a variety of types or classes of municipalities has been formed although their functions and purposes are basically the same. In general the urban municipalities are called cities, towns, or villages, while the rural municipalities are known by several different terms, such as parishes or townships in Quebec, rural municipalities in Manitoba and Saskatchewan, municipal districts in Alberta, and district municipalities in British Columbia. There is, however, no standard definition or prerequisites to incorporation and consequently the characteristics of municipalities of the same class or designation may vary considerably as between provinces. There are over 4,100 of these incorporated units of local self government in Canada.

Generally speaking, in most of the provinces the municipality is also responsible for providing educational facilities at the local level although in all of the larger urban centres and in many other areas as well, the actual administration of school affairs is handled by local school boards. Capital financing and responsibility for the provision of funds through the levy and collection of taxes for the operation of schools is also the responsibility of the municipal councils. In some provinces, however, (notably Quebec) educational services at the local level are the responsibility of separately organized school corporations. Similarly, educational services in areas not included in incorporated municipalities are administered by independent school boards.

For these reasons, in order to get a complete and comprehensive picture of local government finances it is necessary to consolidate the finances of all local school authorities with the general municipal finances. This is a major problem in light of the interprovincial differences in the financial and administrative systems of municipal and school organizations and also because of similar variations within some provinces.

The public finance and government employment fields include federal, provincial, and municipal finance and employment data while the transport field includes the several forms of transport, e.g., railways, road transport, coastwise shipping, inland waterways, air transport, and the continuous transport of goods in bulk by pipe line.

The provisions of the Statistics Act relating to these fields of statistics have a decided influence on the methods employed in obtaining data and in the general working arrangements with governments and government authorities¹.

The Public Finance and Transportation Division is organized in four Sections: Federal and Provincial Finance, Municipal Finance, Transportation and Public Utilities, and Government Employment and Payrolls.

Federal and Provincial Finance Section

This Section is responsible for the statistics of Federal and Provincial Government finance, and for the consolidation of these statistics with municipal finance data supplied by that Section, for the purpose of presentations of combined government finance statistics, i.e., covering all levels of government, federal, provincial, and municipal.

The major portion of the work of the Section centers on compilation of final results for each fiscal year as the official figures become available. The statistics are therefore based on and largely drawn from the official public accounts. Because of the delay in the publication of these documents, the Bureau recently instituted compilations of interim financial statistics of revenues and expenditures for the current year, based on the estimates of the respective governments and preliminary results for the immediately preceding year as forecast by the budget authority at the time the current year's budget is presented.

Thus the statistics of federal and provincial finance fall into three more or less progressive stages:

1. Estimates of revenues and expenditures for the current year.
2. Preliminary analysis of revenues and expenditures for the immediately preceding fiscal year.
3. Final figures as the result of each year's operations become available.

It will be noted that the first two phases relate only to revenues and expenditures whereas the third

1. See Appendix A, The Statistics Act, S. 2 (b), (c), (e); S. 3 (a), (b); S. 9 (1) (b), (c); S. 10; S. 15 (3); S. 25 (1), (2), (3), (4); S. 26 (1), (2); S. 27; S. 32 (i).

provides much more comprehensive and detailed information, including not only revenues and expenditures but debt and assets analysed according to uniform concepts and classifications, and additional analytical detail.

Municipal Finance Section

This Section is responsible for the statistics of local government finance and other aspects of municipal government administration of some 4,100 incorporated cities, towns, villages, and rural municipalities and their local boards, commissions, and subsidiary enterprise undertakings. In addition to revenues and expenditures and balance sheet information, municipal populations, area, assessed valuations, tax rates, tax levies and collections are compiled.

As control and responsibility for the administration of local government affairs is vested in the Provincial Governments, this responsibility is exercised by a Department of Municipal Affairs in nine of the ten provinces. The Bureau's interest in municipal statistics therefore parallels that of the provincial authorities and its work is largely predicated on co-operative arrangements in this field. Provincial authorities each publish annual reports of municipal statistics giving the information for individual municipalities by classes or types according to statutory or other definition of corporate status.

As there is little or no uniformity in the different classes of incorporated municipalities, as between provinces, the work to date has centered largely on compiling the detailed financial and other municipal statistics by totals for each province. The statistics are published on a provincial basis only but follow uniform and standard concepts, definitions, and bases for classifying and consolidating the data.

Transportation and Public Utilities Section

The work of this Section covers a wide range of activities including passenger, freight, operating, traffic, and vehicle statistics for the various transport agencies and similar types of data on the operations of various public utilities. The transport field includes steam and electric railways, express companies, motor carriers (freight and passenger services), international bridge, tunnel and ferry companies, canals (a part of inland waterways), coastwise shipping, international seaborne shipping, and water transportation (a series of statistics based on corporate or company operations regardless of the type of service rendered) and civil aviation.

The public utilities at present covered are telephone systems, telegraph and cable, urban transit systems, oil pipe lines, and central electric station statistics, i.e., the generation or production of hydro-electric power. Because of the overlapping of motor carrier operations and warehousing operations, the Section also handles warehousing statistics.

Government Employment and Payrolls Section

This Section is responsible for the development of statistics on public employment and payrolls which work is carried out in close collaboration with the Employment and Unemployment Sections of the Labour and Prices Division.

At present only two phases of the field of public employment are covered, namely, Federal and Provincial Government employment. The federal data are compiled to serve two needs: that of the various government departments or branches of the service that are concerned with personnel control and administration, such as the Civil Service Commission and Treasury Board; and the needs of the Bureau for statistical purposes. The latter includes a comprehensive coverage of employment statistics and use in preparation of estimates of national income, in addition to the general series of statistics on government employment.

This dual use necessitates two separate types of analysis, the one for administrative needs following the system of departmental organization, branch or division and budgetary control or parliamentary vote of funds; the other an economic classification according to function or service represented by the expenditure involved. The latter classification is that used for the purpose of classifying government expenditures in the public finance series, thereby permitting consolidation of totals for all services of the different levels of government and inter-governmental comparisons according to homogeneous categories.

Administrative analyses of the type first mentioned are also prepared for some of the Provincial Governments. These statistics include data on numbers employed and gross earnings for both regular and casual employees and for the latter, hours worked.

Special Studies

Aside from the regular work of each Section in preparing and publishing the statistics as outlined, there is a continuous demand for special compilations of data and statistical surveys on current aspects of public finance and transportation problems.

Data on government revenues, expenditures, debt, and resources are prepared for conferences concerning financial arrangements and other inter-governmental relationships between the Federal and Provincial Governments and for Committees and Members of the Senate and House of Commons, in response to numerous requests. The need of Canadian representatives abroad for current information on taxation in Canada has led to an annual survey of taxes and rates for the Federal and Provincial Governments and the larger municipalities in each province.

A special compilation of municipal finance data is made each year for the Bank of Canada, which because of its general interest in fiscal and monetary

policy is also a constant user of municipal and other public finance statistics. Studies undertaken in recent years by the various provincial and local authorities on "provincial-municipal" relations have resulted in a particularly heavy demand for special analyses of data relating to this question and particularly for details of inter-governmental subsidies and arrangements for sharing responsibility, financing, and costs of different services between the provinces and their constituent municipalities.

Special statistical surveys are undertaken in the transport and public utilities fields to meet special demands such as for information on consumption and stocks of coal, use of ties or poles, employees and their earnings, freight rates for railways, grain freight rates on the Great Lakes in conjunction with shipping statistics, resources and output of hydro-electric power, commodity movement by ports in international and coastwise shipping, etc.

These special demands in the transport field are particularly heavy during investigations of commissions of inquiry and hearings before regulatory bodies on applications for rate increases. Historical and comparative data are also in substantial demand for use in preparing briefs, papers, and for representations to governments or government authorities on various aspects of transportation problems.

This type of work is inevitable and must be provided for in general statistical organization. It occupies a substantial portion of the time of staffs concerned on a more or less continuous basis. In addition, the Division is responsible for preparing original copy of statistical tables and textual material on public finance, transportation, and utility operations for the *Canada Handbook* and *The Canada Year Book*.

The general functions and organization of work in the Division are shown graphically in the accompanying chart.

Methods of Obtaining the Basic Data

As accounting and administrative procedures vary considerably between governments and the concepts underlying classification of data are dictated largely by local needs or demand, the published accounts of their finances are seldom comparable. Hence, inter-governmental comparisons and consolidations of data can be achieved only by reclassifying the original information and effecting adjustments to present the statistics on a comparable basis. This consideration is basic to statistical work in the field of public finance and it largely dictates the methods employed in obtaining the basic data.

Standard terms and classifications and uniform concepts for the presentation of public finance statistics have been established in consultation and co-operation with the governmental authorities concerned. (See Section on Co-operative Arrangements). These form the basis for the analysis and recasting of data from the form in which it is initially prepared or published by the government concerned.

In the case of federal finance, the data are compiled on an "ad hoc" basis by staffs of the Division direct from the government accounts and other published documents such as estimates, budget speeches, and departmental reports. Details of operations or other aspects of the financial structure which are not available from these sources are obtained by request from the departments or agencies concerned.

For provincial finance, the provincial authorities provide basic analyses of data by means of reporting statements which are merely standard forms of worksheets including in columnar form the prescribed classifications or other basis for analysing the data. These reporting statements are designed and printed by the Bureau and forwarded to the provinces for completion with information for each fiscal year. This applies only to the series of final statistics which are prepared after the actual results of each year's operations are available.

Compilations for the reports *Preliminary Analysis of Revenue and Expenditure of Provincial Governments* and *Summary of Estimates of Revenues and Expenditures of Provincial Governments* are made by the Division staff direct from the available published documents without recourse to the provincial authorities for additional information. For this reason it is not possible to publish these series in as much detail as for the final figures.

Basically the financial and other municipal statistics are compiled by the Division staffs from annual reports of municipal statistics published by provincial departments of municipal affairs (Provincial Bureau of Statistics in Quebec). In one province which has no such department or authority responsible for collecting and reporting municipal statistics (there being only eight urban communities having corporate status as units of municipal or local government), the statistics are compiled from copies of the city and town financial reports which are filed with the Bureau.

These official provincial statistics are analyzed, reclassified, and adjusted to a comparable basis for all provinces. If the published reports do not contain sufficient detail for these purposes, supplementary information is obtained from the provincial and municipal authorities by special request or is compiled by the Division staffs direct from the financial reports of individual municipalities filed with the Bureau.

To indicate the extent of such special compilations, detailed analyses of the reports of some 200 individual municipalities of the total 4,100 are made each year in preparing the financial and other municipal statistics. In addition, up to 100 individual municipal reports are examined annually to obtain information not published in the provincial reports.

Due to the overlapping and interlocking financial and administrative systems of Municipal Governments and local school authorities in the several provinces, the municipal and school finance data must be consolidated in order to obtain comparable statistics for all provinces. Data for this purpose are obtained through the Education Division of the Bureau from

reports of provincial education authorities. Similar adjustments are necessary with respect to the operations and finances of special boards, commissions, districts, or other types of local authorities which function for or on behalf of two or more adjacent incorporated municipalities, e.g., the Vancouver and District Joint Sewerage and Drainage Board, The Greater Winnipeg Water District, or the Montreal Metropolitan Area Commission, Health Units, and Hospital Districts. The finances of these units of local government authority are analysed by the Division staffs either from provincial reports of their operations or from the Unit's published financial statements.

The public accounts of the Federal and Provincial Governments are also frequently referred to for supplementary information on inter-governmental subsidies, grants, and other transfer payments. In addition, correspondence with municipal officials and frequently special questionnaires are employed to secure information not otherwise available.

In the field of transport statistics, the data are usually collected by means of mail questionnaires completed by individuals or firms and returned to the Bureau post free. In some instances the responsibility for collection of the statistical returns is handled by another department or agency of the Federal Government or by a department of a Provincial Government. Reports of vessel arrivals and departures in international seaborne and coastwise shipping are collected by customs port officers and vessel passages through canals are reported by canal officers of the Department of Transport. Copies of reports required from railways and air carriers by federal regulatory authorities, e.g., The Board of Transport Commissioners and the Air Transport Board, are also filed with the Bureau. Similarly, the Bureau receives copies of reports required by either the Federal or Provincial Government regulatory authorities from telephone companies.

Co-operative arrangements also exist with provincial authorities for the use of a joint questionnaire or for the filing of copies of returns required by such authorities to obtain statistics relating to freight and passenger motor carrier operations.

In all other instances the Bureau collects information direct from the respondents by mail questionnaires. Distribution is effected from mailing lists of individual firm names compiled from various sources such as city and telephone directories, trade associations, and publications, newspapers, shipping registers, and other official records of agencies concerned.

Provincial registration authorities supply the Bureau with lists of motor vehicle licensees from which registers of freight and passenger carriers are compiled. Some 20,000 carriers are covered annually in this survey. For statistics of motor vehicle registrations, revenues, gasoline sales, accidents, and expenditures by governments on highways, information is obtained by special questionnaire direct from the Federal, Provincial, or Municipal Government authority concerned.

For Government Employment and Payroll statistics different methods are employed in obtaining basic data from the Federal and Provincial Governments.

Until recently the statistics relating to the federal civil service were obtained by means of monthly reports filed with the Bureau by departments and main branches of the government service. Commencing April 1, 1952, information with respect to the classified services of all departments is being supplied to the Bureau by the Treasury Board by means of a machine tabulation of individual personnel record cards. The Treasury Board, which functions as a part of the Department of Finance of the Federal Government and has certain responsibility over personnel administration (e.g., in connection with establishments and rates of pay), maintains an up-to-date record on punch cards of establishments and employment. The term "classified services" refers to positions of a continuing nature which are termed "permanent" or "temporary" under the general provisions of the Civil Service Act.

Basic data with reference to other categories of employment comprising casual and prevailing rates employees and ships' crews are also obtained by the Bureau through the Treasury Board office. However, as the Treasury Board does not maintain continuing records of such employment, departments report this information each month on special forms designed for this purpose. Similarly, a special form is used by the Treasury Board to obtain employment data monthly from boards, commissions, and other agencies not directly responsible to the Civil Service Commission or Treasury Board. Tabulations of these data are also supplied to the Bureau by the Treasury Board.

On the other hand, the Bureau receives direct a monthly report of employment and payrolls from all Crown companies and other agencies, the operations of which are of a business or *quasi* business nature. This is done under the general provisions of the Statistics Act through the Employment Section of the Bureau as part of its monthly survey of employment in industry. Copies of these reports are supplied to the Public Finance Division for summation and inclusion in the tabulated summaries covering all categories of employment in the federal public service.

Provincial Government employment data are obtained by means of a special questionnaire on which the various departments and branches of Provincial Governments report each month data with respect to persons employed and their earnings according to different categories of employment status. In some instances, the provincial authorities do not compile the data but supply the Division with copies of paylists issued semi-monthly, monthly, or otherwise. Arrangements for follow-up and inquiry are carried out through a central agency or authority in each province.

In the case of Provincial Government enterprises the operations of which are of a business nature, the data are obtained direct by the Employment Section of the Bureau, and copies of such returns are sup-

plied to the Public Finance Division for summation and co-ordination with the information for general governmental services. In a few instances (e.g., in the case of provincial universities and workmen's compensation boards) the Division, by agreement with the provincial authorities, obtains the data direct by means of the standard statistical questionnaire.

It will be seen from the foregoing that many of the problems in this field are similar to those underlying the compilation of public finance statistics. As the basic data are obtained largely according to existing administrative organization within the government services generally, it is necessary to re-classify or analyse them according to standard categories, terms, and concepts applicable to all units of government.

Methods of Obtaining the Co-operation of Respondents

Although the Statistics Act authorizes any person deputed by the Dominion Statistician to have access to any public record or document for necessary information or to aid in the correction or completion of authorized statistics, the Bureau prefers the fostering of friendly mutually advantageous working arrangements with the respective government authorities. These are brought into consultation with a view to establishing a mutual understanding of the problem and to working out the most satisfactory arrangements for obtaining the necessary information. These objectives are attained mainly through Dominion-Provincial Conferences on Provincial and Municipal Statistics which are convened periodically by the Bureau. As a result of these conferences and of the work of continuing committees appointed to study specific problems, provincial and municipal co-operation has been obtained in the adoption and implementation of uniform classifications of financial data, thereby enhancing their comparability and usefulness. The conferences have produced a greater appreciation of the problems confronting the Bureau and the provincial and municipal authorities in the preparation of comparable statistics and a greater willingness to co-operate in solving them. The personal contacts established at the conferences have proved especially beneficial.

The reporting forms used to obtain the data for statistics of Provincial Government finance have been devised and prepared by the Division embodying the recommendations of the Dominion-Provincial Conferences on Provincial Finance Statistics. These are completed by the provinces on a voluntary basis. The large response reflects the general realization of the mutual advantages of co-operation in related fields of endeavour.

Since much of the demand for municipal finance statistics and for uniformity of presentation to facilitate comparisons has come from departments of municipal affairs, municipalities, and organizations of municipal officials, the co-operation of the respondents has, as a rule, been freely and willingly given. Many of the recommendations of the Dominion-Provincial Conferences on Municipal Statistics have

been implemented by the provincial and municipal authorities concerned. Officials of the Division visit provincial capitals to consult on problems of interpretation and definition, to arrange progressive revisions, instigate special surveys, and assist in setting up reporting forms.

In the field of transport and public utility statistics, co-operation of respondents is secured through the assistance of trade associations, Provincial Governments, personal contacts, correspondence, and advertising by the various transport associations through their trade magazines.

Officials of the Division participate in speaking engagements and attend meetings and conventions to discuss problems of mutual interest and to stress the desirability of adequate statistics. They also participate in "refresher courses" and "schools" on municipal accounting and administration for municipal finance officers conducted under the auspices of provincial departments of municipal affairs in conjunction with the universities, and contribute articles on public accounting, finance, and administration for various journals and magazines.

Co-operative Arrangements with Provinces, Municipalities, Federal Government Departments, Trade Associations, etc.

Co-operative arrangements, often on a voluntary basis, have been implemented and continued as a result of personal contacts, discussions between officials of the Division and others, and a demonstrated willingness on the part of Bureau officers to assist other officials at all times in related fields of endeavour.

The Bureau has sponsored Dominion-Provincial Conferences on Provincial and Municipal Statistics at which provincial and other interested officials convene, discuss common problems, and approve or reject the recommendations considered. The Bureau prepares the reports, agendas, etc., of the conferences and continuing committees appointed thereat and implements the recommendations in reporting statements and publications. Some major recommendations of such conferences which have been implemented by the Division are: writing, editing, printing, and free distribution to all municipal auditors and treasurers and interested officials of a Manual of Instructions which includes Financial Statements, Accounting Terminology, Population, Area, and Assessment Schedules for Municipal Corporations; preparation and printing of a Proposed Standard Form of Report for Statistics of Municipal Finance; uniform provincial fiscal years (these which formerly varied greatly now all end on March 31).

Reporting statements of provincial finance statistics are prepared on a voluntary basis for this Division by Provincial Governments. Statements of revenues and expenditures of Provincial Governments on a quarterly basis are collected by the Division for use of the National Income Section of the Research and Development Division in preparing quarterly estimates of national income and production.

Most of the provincial departments responsible for municipal statistics have jointly agreed to collaborate with the Bureau in the work of collection and compilation. They supply all available data, such as copies of their annual reports, preliminary and special compilations, etc., as required.

In the one province where there is no department responsible for the compilation of municipal statistics, this Division has undertaken to analyse all financial reports of municipalities concerned and to prepare the required data.

Another province, in which it has not been possible to implement the recommendations of the conferences with respect to the system of municipal statistics and reports, supplies the Division with copies of the auditors financial statements and reports of the municipalities and compilations are made therefrom by the Division.

As individual provinces implemented the decisions approved by the Conferences on Municipal Statistics, an official of the Division visited the provincial capitals to assist in setting up reporting forms.

The co-operative arrangements with the Treasury Board with respect to Federal Government employment and payroll statistics are described above (see page 111).

Co-operative arrangements exist with provincial authorities for use of a joint questionnaire or for the filing of copies of returns required by provincial authorities relating to freight and passenger motor carrier operations; in two cases provincial authorities insist upon the completion of Bureau returns as a prerequisite for renewal of operating licence.

As a result of representations from the trade associations, the Bureau has instituted an annual census of warehousing operations and collaborates with association and industry representatives regarding changes in the schedule to meet the emerging needs of the industry. In the field of road transport a similar basis of co-operation exists with respect to the trucking industry. The Bureau also took a leading part in the preparation of and printed a standard "Classification of Accounts for Motor Carriers" for use of the industry, also a similar document for "Transit Systems". It assisted in preparing and printing for distribution a set of "Rules Governing the Classification of Steam Railway Employees" for use in allocation of payroll costs in railway accounting.

Co-operative arrangements with other departments of the Federal Government are also in effect. Under the provisions of the Railways Act and the Statistics Act, a joint form of report is used by railways for reporting to the Board of Transport Commissioners (the federal regulatory authority) and to the Bureau. Statistics of telephone, telegraph, and express companies are obtained likewise. In the case of Civil Aviation Statistics, the Bureau works in collaboration with the Air Transport Board in the design and preparation of reporting schedules and prints them for

the Board which in turn arranges for the reporting carriers to provide an extra copy of their monthly and annual reports for Bureau use.

As a result of these arrangements, the Bureau acts as the main statistical agency of the regulatory body and in addition to the published data supplies them with compilations for their special needs. The Bureau also acts in a similar capacity for the Canadian Maritime Commission in conducting special surveys and compiling special statistical data relating to Canadian shipping.

The Department of National Revenue is responsible for maintaining a check on shipping and cargoes arriving from and departing for ports of foreign countries. The Bureau is concerned with the statistical aspects of such ship and cargo movements. Hence co-operative arrangements have been made with customs authorities for obtaining reports of arrivals, departures, and cargoes of shipping in foreign trade and similar arrangements have recently been made with respect to coastwise shipping. The customs authorities in turn use our statistics as aids to the organization and administration of port duties and establishments.

Within the Bureau, co-operative arrangements exist with other Divisions for the collection and compilation of statistical data. Quarterly statements of provincial revenues and expenditures are obtained and analysed for the use of the National Income Section. That Section is also supplied with the results of an annual survey of salaries and wages paid by municipalities and with information on earnings of superannuation, pension, and sinking funds of Provincial and Municipal Governments.

Government employment and payroll data are provided to the Labour and Prices Division and, as already stated, the Employment Section of that Division collects the relevant statistics from government enterprises and also from several of the administrative departments. The Education Division supplies the Municipal Finance Section with data on school finance. The Provincial and Municipal Finance Sections collect and compile information on capital repair and maintenance expenditures by Governments for use of the General Assignments Unit in the report on "Public and Private Investment".

Because of its close association with officials of Provincial and Municipal Governments, the Public Finance Division is consulted and frequently called upon to undertake assignments either by mail or personal visit to assist other Divisions in related fields of endeavour, e.g., for construction statistics, hospital finance, employment, school finance, and statistics relating to the control and sale of alcoholic beverages which is a Provincial Government monopoly exercised through liquor control boards or commissions.

Integration with Work of Other Bureau Divisions; Other Departments; Other Governments

Reference to integration of the work of the Public Finance Division with that of other departments and agencies of the Federal Government, Provincial and

Municipal Governments, trade associations, etc., and with other Bureau Divisions has already been made, particularly in the section dealing with co-operative arrangements. In general, as regards integration of work the Public Finance Division adheres to the following basic principles: first, the needs of all concerned must be considered; second, there should be no duplication or overlapping of work on the part of staffs concerned; and third, there should be no duplication or overlapping of work in the supplying of statistics by respondents. Specific examples are the arrangements with provinces and municipalities for sharing the work of making special compilations, thus avoiding duplication; the joint returns to the Bureau and other agencies; the special compilations made for other Bureau Divisions; and the arrangements whereby one questionnaire is made to serve the needs of all Bureau Divisions in related fields.

Integration of work within the Division is achieved by frequent conferences of the Director with the Chiefs and the professional and technical officers of the Division.

Methods of Follow-up, Editing and Checking, Compilation, and Other Aspects of Processing

Reporting statements for provincial finance statistics and the procedures used are so designed that accuracy can be verified to a reasonable extent by reference to the public accounts and other official documents of the Provincial Governments. Items are coded by the officials who submit the reporting statements, and these are checked by an officer of the Division who initiates correspondence when necessary regarding questions of interpretation, differences in classifications of items, omissions, etc. The coded items are then summarized to provide the desired classification of the financial data.

Financial statistics of the Federal Government are built up along similar lines except that the reporting statements are prepared by an officer of the Division from the public accounts of the Government of Canada and from other official reports and documents.

In provinces where the recommendations of the Dominion-Provincial Conferences on Municipal Statistics as set out in the "Manual of Instructions" have been adopted, only a check on the correctness of the provincially published statistics and adjustments to isolated items is necessary. For those provinces which have not adopted the Manual of Instructions, all items must be checked and reclassified where necessary. Hence compilation is on worksheets upon which the original data from provincial reports are set down, corrections or adjustments noted, and additions and deletions made to arrive at totals comparable in so far as possible with the standard classifications.

The nature of the work on financial statistics of governments is such that the only mechanical compilation that is feasible is by adding machine.

In the field of transport and public utility statistics the method of processing varies with the size and extent of the coverage for each report. For the reports used in obtaining shipping statistics which are made daily and therefore involve a large number of returns, the data are coded on the returns, cards are punched, and the statistics compiled by the "Hollerith" method of mechanical tabulation. Most annual returns are designed for pegboard compilation while for monthly and weekly returns the statistics are compiled manually by ledger postings or on worksheets which are then added and cross-checked where possible to obtain totals for use in the statistical tables. The limited volume of returns as well as the lack of cross-classification of data does not merit the "Hollerith" method of compilation in these instances.

The schedules employed for obtaining the data for government employment and payroll statistics are designed to render them suitable for mechanical tabulation employing the pegboard method. Special processing is necessary in the case of payrolls before the information is transcribed to the schedules for compilation. A dead-line date for receipt of returns provides a time-period for processing and editing before actual compilation begins. Federal and provincial public accounts and estimates are used as a check on both the classification and completeness of data reported.

All compilations of data for public finance statistics and for transport statistics where the volume is small and the compilations are suitable to manual ledger or worksheet postings, are done within the Sections concerned. The card-punching and Hollerith machine or mechanical pegboard compilation are done in the Mechanical Tabulation Division of the Bureau.

In the Public Finance and Government Employment Sections, the method of follow-up varies depending on the system employed and arrangements for obtaining basic data from the governments concerned. There is no standard method or procedure; in fact these may vary even from year to year due to changes in personnel and procedures or to the introduction of co-operative measures.

The method of follow-up in transport statistics follows the standard procedure employed by other Divisions of the Bureau, consisting of routine periodic tracers for delinquents, corrections by staffs concerned, and subsequent reference to Chiefs of Sections, the Director of the Division, or the Dominion Statistician for action as circumstances warrant.

Statistical Gaps, Appraisal of Quality, and Program for Improvement

The statistical gaps which exist in the statistics of public finance are largely matters of detail. Data on capital expenditures and general fixed assets are very incomplete and not well classified. Details of "capital" expenditures in an economic sense, as distinct from "current or operating" expenditures are

not available. As many of the former types of expenditure are charged to current year's budgets and not readily distinguishable therein it is not possible to make valid comparisons or to assess the impact of "capital" expenditures on fiscal and taxation policy or their relationship to public investment programs. Also, it is not possible under existing circumstances to isolate all government expenditures on "repair and maintenance" in the precise terms of the requirements in this latter regard.

Details of government expenditures, classified by "objects of expenditure", would, to a very great extent, meet these needs and also would provide useful information for economic and social analysis studies.

The lack of information on the source and disposition of capital funds is the most important gap in municipal statistics. Particulars of capital expenditure programs are not reported to the provincial authorities in many instances and information on grants or contributions from governments and other sources towards the cost of such capital undertakings is very incomplete.

Information on school finance and concerning the operations of municipal libraries, hospitals, and other boards and commissions is limited for many provinces and improvement is needed in this respect to enable co-ordination and integration with public finance statistics.

Statistics of the operations and finances of government enterprises, which at present are in the discussion stage, should be available on a basis to permit their consolidation with the main body of government budgetary accounts for appraisal of the extent and impact of government operations on both the public and private sectors of the economy.

The surveys of government employment and payrolls will not be complete until coverage of all levels of government in Canada is obtained. These data are not available for Municipal Governments, although the Division does estimate the total salary and wage bill on the basis of expenditures on this account by a selected sample of municipalities. It is proposed to collect the municipal data by mail questionnaire from the principal cities and other large municipalities and from a scientifically selected sample of the smaller municipalities which will enable reliable estimates to be prepared.

Information on hirings and separations in government employment is incomplete as also is sex distribution. In addition, it is not possible to provide analyses by geographic locations or by categories within the Standard Industrial Classification corresponding with other related statistical series on employment and unemployment. The administrative accounting and payroll systems of governments renders this impracticable at the present time.

The most important gap in transport statistics is in respect of motor carrier statistics. The following are the important additional items on which information is lacking: quantity of goods carried over-the-road and locally; kind of good carried (commodities);

net and gross revenue ton-miles and passenger-miles; vehicle-miles loaded and empty and by carrying capacity of vehicles; motive power of equipment and number of axles on vehicles; quantity of goods carried across provincial and international boundaries; revenue per ton-mile and passenger-mile; freight revenue by commodity groups; and ownership of vehicles by governments.

In addition, it would be useful to have the following information as well: assets and liabilities of at least the larger carriers; the kind of freight vehicle involved in accidents; and data which would show density of traffic on various routes such as the number and carrying capacity of vehicle-miles operated; quantity of goods or passengers carried and gross ton-miles and passenger-miles for the different routes concerned.

Because of the nature of the data and the practical considerations involved, much of the information required to round out statistics on road transport will no doubt have to be obtained by means of "sample" surveys. For instance, a sample survey of road transport is contemplated to secure information on the volume, kind of goods carried, ton-miles and vehicle-miles and other relevant data as referred to above.

A separate body of statistics on the operation of Urban Transit Systems would be desirable. At present their operations are included in the statistics of Motor Carriers-Freight and Passenger, Electric Street Railways, and Transit Statistics in order that each of these series may comprehend the whole. However, it would be preferable in light of the different types of traffic involved to isolate the statistics relating to urban transit systems as distinct from other motor carrier and railway operations.

Complete information is not available at the present time concerning carriage of goods and vessel movements on inland waterways. Partial information is available through canal statistics, but the data obtained in this regard are not compiled on a basis which would permit its co-ordination with international seaborne and coastwise shipping statistics.

Data on the operation of domestic toll bridges and ferries as adjuncts or connecting links of local roads and highways should also be available in relation to highway statistics. Similarly, statistics concerning traffic, etc., at airports and landing fields and in relation to their operations should be developed as an important adjunct of Civil Aviation Statistics. Considerable data in this regard are, however, available in the Department of Transport.

Plans for an annual census of television and radio broadcasting are being considered in co-operation with the Telecommunication Division of the Department of Transport, the Canadian Broadcasting Corporation, and the Canadian Association of Broadcasters. Plans are also under consideration for an annual census of the transportation and distribution of gas by pipe line and of the operation of gas supply systems.

Uses of Various Statistical Series

Public finance statistics serve important uses from a broad economic point of view. Public finance plays a predominant part in the direction of the national economy; trade, prices, employment, etc., are all affected by the financial policies of governments. This relationship between public finance and the national economy has become increasingly close in recent years as a result of the gradual growth and expansion in the recognized functions and services of government. Government budgets serve as a medium for redistribution of the national income and the objects for which public monies are expended are important factors in determining the direction of the productive economy of the nation. This is particularly so of the Federal Government, although the financial policies and budgetary programs of Provincial Governments can and do have an important influence on local economic conditions. The same may be said in a general way of Municipal Governments, although they operate in a more restricted sphere, have limited and less flexible taxing powers (mainly real property taxes) and, therefore, have less flexibility in their budget programs.

Public finance is perhaps the "key" factor, too, in inter-governmental relations. The Royal Commission on Dominion-Provincial Relations set up in 1937 was instructed, amongst other things:

"To examine public expenditures and public debts in general, in order to determine whether the present division of the burden of governments is equitable, and conducive to efficient administration, and to determine the ability of the dominion and provincial governments to discharge their governmental responsibilities within the framework of the present allocation of public functions and powers, or on the basis of some form of re-allocation thereof".

Public finance data were used by the Commission as the basis for its proposed reconstruction of the Canadian tax structure and re-allocation of governmental functions. Similar use of public finance data was made in framing proposals on public investment, health and welfare programs, etc., and for negotiating tax rental agreements recommended by the Dominion-Provincial Conference on Reconstruction, 1945.

Provincial and municipal finance data serve similar needs of Provincial Governments, commissions and others concerned with administration of local municipal government affairs and the allocation of taxing powers and responsibility for services as between provinces and municipalities.

Comparative public finance statistics are invaluable for studies involving inter-governmental comparisons, checks on administrative efficiency, economy of operation, relative tax burden, etc. Uniformly classified municipal finance statistics are particularly useful in this regard so that municipali-

ties may compare their tax resources and rates and costs of rendering services with others of comparable size.

Committees of the Senate and House of Commons as well as individual Members of Parliament are frequent users of public finance statistics. Financial institutions—banks, insurance companies, trust, mortgage and loan companies, investment dealers—are also directly concerned with public finance, both as to the effect of government policies on their business operations as well as from the standpoint of their investment holdings in government bonds.

University authorities, and students in public administration, economics, commerce, and finance also make extensive use of public finance statistics.

Interest in and use of government employment and payroll statistics closely follows that of public finance. The growth in and general magnitude of government services is in turn reflected in the size of staffs employed. Salaries and wages constitute the largest single element of cost in the case of many services.

Governments are the largest single type of employer in the country. As such, their employees represent a relatively large part of the total labour force and they are strong competitors with private industry in this regard. The statistics serve important uses in relation to overall employment and labour force statistics.

Statistics on the extent and characteristics of the civil service are important factors in relation to personnel control and administration, establishments, and rates of pay. They are largely used by government agencies concerned in administering these problems.

Other departments or agencies of governments, e.g., Departments of Labour, the Unemployment Insurance Commission, and Workmen's Compensation Boards of Provincial Governments, also use government employment and payroll statistics, as such have an important bearing on the functions of these authorities.

Transportation statistics also serve many uses. Adequate transport statistics are essential for the formulation of national policy on transportation and related problems. Like other statistical series, transport statistics provide a basis for description and analysis of this sector of the economy and its significance in relation to the economy as a whole. Transport is a very important element in the Canadian economy in relationship to national production, demand for capital expenditure, employment and payrolls, foreign payments, and in other respects. It is important to be able to measure the significance of this industry in accurate statistical terms and to determine the character and direction of development of the industry as a whole. For instance, motor carrier transport has developed rapidly from its beginnings in the early 1920's and has now become a very significant segment of the whole transportation industry. This has given rise to rather fundamental changes in the structure of the transport industry which are

only imperfectly understood because of our inability to measure them in accurate quantitative terms. We know in general terms that motor carriers have introduced a strong element of competition with some areas of rail transport and have had effects on the structure of railway rates but we have no precise measures of these changes. Specifically, traffic statistics are inadequate and the fundamental unit of measurement of performance—the ton-mile of freight or the passenger-mile—is completely lacking.

In the last few years attempts have been made to compare rail and trucking costs, e.g., in connection with submissions of the Railway Association of Canada to the Royal Commission on Transportation which reported in 1951. These attempts have been quite unsuccessful because the basic information is not available for the trucking industry. Such comparisons must take into account both terminal and line haul costs and must allow for length of haul, size of load, and special circumstances associated with the movement of particular goods. Basic to this analysis is the ability to express costs in some fundamental units of performance such as the ton-mile or the passenger-mile. Information at present available does not lend itself to this kind of analysis. For purposes of description, the organization of the industry, types of carrier, routes operated, capitalization, amount and kind of equipment, number of operators, quantity and kinds of traffic, ton-miles and passenger-miles of traffic, revenue and expenditures, number of employees and size of payroll, freight and passenger rates are all necessary elements. These elements are also necessary for analysis of costs of operation, rate structure and cost and rate comparisons with competitive forms of transport. For some analytic purposes a regional breakdown of the statistics would be useful, e.g., for a study of the regional competitive situation amongst transport agencies.

Railway statistics are used extensively by the Department of Transport and the Board of Transport Commissioners in connection with the administration and regulation of railways, railway freight rates, passenger fares, etc. Telegraph, telephone, and express statistics are similarly used. The Canadian Maritime Commission uses shipping statistics in relation to various aspects of the Maritime policy such as port facilities, foreign shipping in Canadian waters, and shipping subsidies. The Air Transport Board makes extensive use of statistics of civil aviation.

Many other departments and agencies of the Federal Government use transport statistics in carrying out their administrative functions. For instance,

the Public Works Department is interested in transportation statistics in connection with the maintenance, repair, and extension of Canadian ports, highways, international bridges, ferries, tunnels, etc. The Department of Agriculture is interested in the movement of agricultural commodities as shown in the weekly, monthly, and annual car loadings. The Fisheries Department is interested in statistics of the movement of fish by water and rail. The National Health and Welfare Department makes extensive use of the data on accidents and time losses in the various transportation industries. The Canadian Travel Bureau is keenly interested in statistics of passenger traffic, transportation facilities, motor vehicle registrations, etc.

Provincial and Municipal Governments draw widely on the Division's reports covering highways, motor vehicles, railway revenues, freight, motor carriers, telephones, telegraph, power rates, automobile registrations, etc., for regional comparisons, preparation of briefs to regulatory authorities, and many other uses.

Railway, telephone, telegraph, pipe line, hydro-electric power and transit statistics are used by the railways, employee unions and others in connection with rate hearings, wage contracts, etc., as well as by the industries themselves in planning for the development and extension of such facilities.

The various transportation associations such as the Railway Association, Canadian Transit Association, Canadian Manufacturers Association and many others use data published or supplied by the Division in their annual reports, in the preparation of briefs to regulatory authorities, and for publicity purposes.

Business organizations make wide use of the various types of transport and public utility statistics. Current information on car loadings, for instance, is a ready and reliable indicator of general market and business conditions. Financial houses use the financial and operating statistics of the various transportation companies, particularly those whose shares are traded on the exchanges or whose bonds are held by investors. Trade and other magazines reproduce a considerable part of the Division's weekly, monthly, and annual transport data for the information of their readers.

Canadian universities and those of other countries as well use the Division's statistical material in their courses on statistics and transportation.

The United Nations and other international organizations and foreign associations in the transportation, communication, and public utility fields are regular users of statistics with respect to their special interests.

Number, Periodicity and Nature of Reports

Report	Number	Periodicity	Contents
Public Finance:			
Combined Revenues and Expenditures — All Governments in Canada	1	Annual	Summary of revenues and expenditures in comparative form for the Federal, Provincial, and Municipal Governments.
Principal Taxes and Rates — Federal Provincial and Selected Municipal Governments	1	Annual	Type of Tax, basis of measurement and rate at which imposed for the principal forms of government taxes.
Financial Statistics of Provincial Governments	1	Annual	Revenues, expenditures, assets, liabilities, and analytical summaries of investments and debt, including data for selected government enterprises and social funds.
Preliminary Analysis of Revenue and Expenditure of Provincial Governments	1	Annual	Condensed summary of revenues and expenditures based on preliminary releases of fiscal year's operations.
Summary of Estimates of Revenue and Expenditure of Provincial Governments	1	Annual	Condensed summaries of revenues and expenditures as budgeted for each fiscal year.
Financial Statistics of Municipal Governments	1	Annual	Revenues, expenditures, assets, liabilities, and analytical summaries of investments, debt, and general fixed assets as well as population, area, assessed valuations, tax levies, collections and arrears.
Preliminary Analysis of Revenue, Expenditure and Tax Collections of Municipal Governments	1	Annual	Condensed summaries of revenues, expenditures, tax levies, collections and arrears based on interim compilations of year's operations.
Federal Civil Service Employment and Payrolls	1	Annual	Number of persons employed and salaries and wages paid for "Permanent" and "Temporary" employees in the Federal Civil Service and expenditures on salaries and wages for other categories of employment.
Transportation:			
Railways:			
Canadian National Railways	1	Annual	Revenues, expenses, and operating data, 1923 to date, in comparative form.
Canadian Pacific Railway	1	Annual	Revenues, expenses, and operating data, 1923 to date, in comparative form.
Carloadings of Steam Railways	1	Weekly	Number of cars of revenue freight loaded by principal classes of commodities and commodity groups for 16 major railways. The last issue of each month includes a monthly summary and index numbers.
Changes in Single Track Mileage Operated by Steam Railways	1	Annual	Location of additions and abandonments in single track railway mileage.
Electric Railways	1	Annual	Passenger, freight, operating, traffic, and vehicle data, etc., for electric inter-city and urban street railway systems.
Express Statistics	1	Annual	Financial operating and traffic data of express companies and express agencies of railways.
Operating Revenues, Expenses and Other Statistics of Steam Railways	2	Monthly & Annual	Passenger, freight, and operating data for 16 major railways with annual operating revenues of \$500,000 or over, including an annual summary.
Traffic of Steam Railways	2	Monthly & Annual	Revenue freight carried by commodities and by provinces, including an annual summary.
Steam Railways (Final)	1	Annual	Passenger, freight, operating, traffic, and vehicle data, etc., for steam railways.
Steam Railways (Preliminary)	1	Annual	Condensed summaries of significant aspects of operations and traffic of steam railways pending completion of final detailed compilations.
Telegraph and Cable Statistics	1	Annual	Financial, operating, and traffic data of telegraph and cable companies and of such agencies of railways.

DOMINION BUREAU OF STATISTICS
PUBLIC FINANCE AND TRANSPORTATION DIVISION

Chart showing function
and organization

DOMINION BUREAU OF STATISTICS

PUBLIC FINANCE AND TRANSPORTATION DIVISION

Collects, processes, analyses, and publishes statistical data relating to government finance and administration including selected government enterprises and data relating to transportation and other public utilities. Conducts special statistical surveys on current aspects of these problems for use in the Bureau and for other government departments or agencies and other authorities. The staff of the Division numbers 41.

Director, James H. Lowther, Statistician Grade 8

General Staff - 5

1 Stenographer Grade 3
1 Stenographer Grade 2B
1 Stenographer Grade 1
1 Typist Grade 2A
1 Typist Grade 1

FEDERAL AND PROVINCIAL FINANCE SECTION

Public finance data for the Federal and Provincial Governments and for selected government enterprises and agencies. The staff of the Section numbers 6.

Special Studies

Comparative and combined summaries of public finance data for all levels of government.
Capital expenditure forecasts for Public Investment Survey.

Quarterly analyses of provincial revenues and expenditures for National Income purposes. Data for Canada Year Book and Canada Handbook. Conferences and Continuing Committees on Provincial Income Statistics.

Chief, G.A. Wagdin, Statistician Grade 4
1 Statistician Grade 2
1 Statistician Grade 1
1 Principal Clerk
2 Clerks Grade 3

MUNICIPAL FINANCE SECTION

Public finance data of Municipal Governments and of selected government enterprises and agencies. General Municipal Statistics - population, area, assessment, taxation, etc. The staff of the Section numbers 5.

Special Studies

Preliminary Municipal Statistics for Bank of Canada, Sinking Fund, superannuation and pension fund earnings. Municipal salary and wage payments.
Capital Expenditure forecasts for Public Investment Survey.

Data for Canada Year Book and Canada Handbook.
Conferences and Continuing Committees on Municipal Finance Statistics.

Chief, J.A. Barclay, Statistician Grade 4
1 Statistician Grade 1
1 Principal Clerk
2 Clerks Grade 3

TRANSPORTATION AND PUBLIC UTILITIES SECTION

Passenger, freight, operating, traffic and vehicle data, etc., for railways, road transportation, water transport and shipping, and civil aviation and data with respect to operations of other public utilities. The staff of the Section numbers 19.

Special Studies:

Index numbers of freight rates.
Freight rates on grain by water.
Domestic cost of electricity.
Steam railway employees and compensation.
Waterways of Canada (Historical).
Coal Consumption and Inventories for Census of Industry.
Data for Canada Year Book and Canada Handbook.

Chief, R.A. Brown, Statistician Grade 4

GOVERNMENT EMPLOYMENT AND PAYROLLS SECTION

Public employment data - numbers employed and earnings, regular and casual employees - by administrative and functional categories and for government enterprises, servicing other Divisions, particularly Labour and Prices and Research and Development. The staff of the Section numbers 5.

Chief, H.O. Taylor, Statistician Grade 3
2 Clerks Grade 4
2 Clerks Grade 2A

RAILWAYS AND ROAD TRANSPORT

Statistics of steam and electric railways, express, telegraph and cable, motor carriers, motor vehicles, gasoline sales, international bridges, tunnels and ferries. Highways expenditures.

Staff - 7

1 Statistician Grade 1
1 Clerk Grade 4
2 Clerks Grade 3
3 Clerks Grade 2A

WATERWAYS AND CIVIL AVIATION

Statistics of water transport, canal traffic, coastwise shipping, international seaborne shipping, air carriers, flying clubs.

Staff - 8

1 Statistician Grade 1
1 Clerk Grade 4
1 Clerk Grade 3
1 Clerk Grade 2B
4 Clerks Grade 2A

PUBLIC UTILITIES

Statistics of telephone systems, central electric stations, warehousing, oil pipe lines.

Staff - 3

2 Clerks Grade 4
1 Clerk Grade 2A

Number, Periodicity and Nature of Reports – Continued

Report	Number	Periodicity	Contents
Transportation – Concluded:			
Road Transport:			
Motor Carriers: Freight and Passenger	1	Annual	Passenger, freight, operating, and vehicle data of "for-hire or common" carriers.
Motor Vehicle	1	Annual	Registrations by class or type of vehicle, revenues derived therefrom and from gasoline sales; also motor vehicle accident data.
Motor Vehicle Registrations (Preliminary)	1	Annual	Preliminary figures on motor vehicle registrations by class or type of vehicle.
Transit Statistics	2	Monthly & Annual	Passengers carried, revenue, and mileages run by motor buses and electric railways, including an annual summary.
International Bridges, Tunnels and Ferries	1	Annual	Financial, operating, and traffic data, etc.
Highway Statistics	1	Annual	Mileage and public expenditure on highways, roads, bridges and ferries.
Water Transport and Shipping:			
Canal Traffic	2	Monthly for season of navigation April-Nov.	Passenger, freight, and vessel movement through canals, including an annual summary for the 9 months' season of navigation.
Shipping	1	Annual	Arrivals, departures, registry of vessels, and cargoes carried in international seaborne and coastwise trade.
Water Transportation	1	Annual	Financial, operating, traffic, and vehicle data of firms or vessels engaged in water transport, including ocean, coastal, and inland steamship lines.
Civil Aviation:			
Civil Aviation	1	Annual	Passenger, freight, operating, traffic, and vehicle data for scheduled, non-scheduled, and other air carriers.
Civil Aviation	2	Monthly & Annual	Passengers and freight carried, operating, and traffic data in condensed form including an annual summary.
Public Utilities:			
Central Electric Stations	1	Annual	Production and use of hydro-electric power and data on operations of power plants.
Central Electric Stations	1	Monthly	Production and consumption of hydro-electric power, including imports and exports.
Cost of Electricity for Domestic Use and Monthly Billings	1	Annual	Comparative data on cost of hydro-electric energy for domestic services in larger cities and towns, including bills for commercial lighting and small power services.
Telephone Statistics	1	Annual	Financial, operating, traffic, and equipment data, telephone companies.
Warehousing Statistics	1	Annual	Financial, operating, storage, and equipment data, etc., of the warehousing industry.
Pipe Lines (Oil) Statistics	1	Annual	Financial, operating, traffic, commodity, and equipment data, etc., for oil pipe lines (Note: First issue in course of preparation, series commenced only with 1951).
Pipe Lines (Oil) Statistics	1	Monthly	Operating, traffic, employment, and accident data including quarterly operating revenues for oil pipe lines.

Number, Periodicity and Nature of Reports – Concluded

Report	Number	Periodicity	Contents
Technical and Other Publications:			
Manual of Instructions Relating to Municipal Accounting and Financial Reports	1	1st Edition published 1942 revised edition 1950	Pro-forma financial statements including prescribed classifications and textual explanations of terms and accounts, municipal accounting terminology, population, area, and assessment schedules and financial statements prescribed for municipal superannuation or pension funds.
Classification of Accounts for Motor Carriers	1	1st Edition published 1947	Classification of balance sheet operating and income accounts for motor carriers including textual explanations of terms and accounts used.
Classification of Accounts for Transit Systems	1	1st Edition published 1946	Classification of balance sheet, operating and income accounts for local transit systems, including electric street railways, motor buses and trolley coaches.
Rules Governing the Classification of Steam Railway Employees and their Compensation	1	Published effective Jan. 1, 1926	Rules for defining and counting employees, calculating time paid for and compensation and a classification of railway employees according to occupations and duties which also serves as the basis for expenditure accounting of payrolls.
Dominion-Provincial Conferences on Provincial Finance Statistics	4	Conferences held in 1933, 1943, 1945, 1947 and 1952	Reports of Committees on memoranda of matters submitted to Conferences for consideration; Transcript of discussions at Conferences; Summary report on Conference proceedings; and Reference Book containing prescribed classifications and principles governing the reporting and compilation of data for provincial finance statistics.
Dominion-Provincial Conferences on Municipal Statistics	3	Conferences held in 1937, 1940 (2), 1947 and 1948	Reports of Committees on memoranda of matters submitted to Conferences for consideration; Transcript of discussions at Conferences and summary report on Conference Proceedings.

DOMINION BUREAU OF STATISTICS

SPECIAL SURVEYS DIVISION

The Special Surveys Division was originally a section of the Central Staff of the Bureau and was organized to meet the specific problem of supplying up-to-date data on the population and the labour force. At the end of the war, the need was apparent of supplying such material to assist people, business, and government to follow the course of reconstruction and reconversion.

The decennial census supplied valuable benchmark data of a high degree of accuracy. Regarding current data, an excellent system of vital statistics, a monthly survey of employment covering the largest employers, and monthly records of insured unemployment provided information on a number of components of the labour force but serious gaps remained. There were no data on the size and main characteristics of the labour force as a whole; material was lacking concerning the agricultural labour force, the self-employed, and those employed in small establishments and in occupations outside the coverage of the Unemployment Insurance Act. Current data on interprovincial migration, family structure, housing characteristics, and numerous other population fields were not available.

More frequent census-taking had the basic disadvantages of high cost, administrative difficulty, and the impossibility of tabulating and publishing results with sufficient speed. It was decided to obtain the required data by sampling, and a Sampling Unit, later to be known as the Special Surveys Division, was set up to design and administer the surveys. Although it was some time before the organization reached its present stage of delineation of functions, all the current operations were carried on from the beginning to a greater or lesser degree and the existing stage of organizational development will be used even when referring to some of the earlier steps in sample design.

The Division is divided into four main groups:

1. The Sampling and Analysis Section, which is responsible for the design and maintenance of the samples used and for carrying out such research and calculations as are necessary to ensure that the accuracy of the results remains within acceptable limits.
2. The Regional Offices, which are responsible for obtaining the information from the field.
3. The Operations Section, which is responsible for the processing of the field information and the publication of the results.
4. The Administrative Organization, which is responsible for the co-ordination of the activities of the Division and the servicing of the various Sections.

Sampling and Analysis Section

Any discussion of the Sampling and Analysis Section must commence with sample design. Most samples in use by the Division are based on the original design devised for the labour force surveys. A sample of one per cent of the households in Canada was decided upon as large enough to secure the desired precision and small enough to prove practicable with respect to cost, administration, and the tabulation of results. The sample was large enough to be a satisfactory medium for collecting additional data on a wide range of population topics as well as the labour force data for which it was intended. It was considered inadvisable to increase the sample to an almost unmanageable size to reduce the sampling fluctuations when errors arising from difficulties of enumeration and interpretation generally would exceed those arising from sampling procedures.

The process of geographical concentration was carried out in several stages and a somewhat different procedure was followed for rural areas and urban centres of less than 30,000 population than for urban centres of 30,000 or over together with their peripheral built-up areas.

The area of each province outside the major cities was divided into primary sampling units (PSU's) which were stratified according to their predominating common characteristics. The census was the main source of data on which the stratification was based and PSU's were assembled out of whole townships and other census subdivisions. The first stage of concentration was to select, using random methods, one PSU from each stratum.

The second stage of concentration was to select segments within the chosen PSU. The areas known as enumeration subdistricts into which all Canada was divided for census purposes were used as the second stage units. It was possible, by noting the number of farms in each subdistrict, to classify the subdistricts in rural areas into two groups one of which had a higher degree of farming activity than the other. The three groups obtained by considering the rural farm, the rural non-farm, and the urban subdistricts of each PSU were then regarded as substrata within the stratum as a whole and the sampling of segments within the selected PSU was directed to obtain the distribution of the population in the stratum as a whole rather than in the particular PSU.

In the final sampling stage, each chosen segment was subdivided by convenient and recognizable boundaries into clusters each containing approximately the same number of households. For this purpose, the most detailed culture data maps were

used so that it was possible to define small areas which could be identified in the field. The last sampling stage was the selection of clusters.

In the major cities, three basic strata were considered – the "hard-core", the inner peripheral area, and the outer peripheral area. All of the major cities are included in the sample so that selection at the PSU level does not apply. Within the "hard-core", the city block is the standard unit of selection comparable to the segment in rural PSU's. A measure of block-size was obtained by counting the number of listings on all sides of each block from the most recent city directory and entering these on a large-scale map. The probability of selection of any block was in proportion to the number of households it contained. The first stage was the selection of a sample of blocks while the final stage was the selection of households within each of the chosen blocks. This selection was made from a field listing of all the households in the block. The sampling within blocks was directed to obtain five households as estimated on the basic data.

A somewhat similar multi-stage design is used in the peripheral areas. However, the city directories proved inadequate and the original counts were carried out in the field.

The original design was completed on the basis of 1941 Census data by a group which was the forerunner of the Sampling and Analysis Section. The most recent task of the Section is the revision of the sample using the data obtained during the 1951 Census. An unbiased procedure would be to select afresh one unit within each stratum with probability proportional to the newly obtained measure of size and then to use this measure of size in estimating. However, there is a substantial investment in the form of lists of households in selected segments and an administrative requirement is, therefore, that as few as possible of the originally selected units be changed. Methods have been devised for adjusting probabilities so that the newly selected unit, chosen with probability proportional to the 1951 measure of size, is the same as the old one in as many strata as possible.

Another component of sample maintenance concerns the rotation of the sample, the primary objective of which is to ensure that no household is included in more than four successive surveys. Each quarterly survey, a new sample of households is selected in a quarter of the blocks and segments in the sample. This procedure is followed until every household in a PSU has been enumerated four times. It is then necessary to rotate into a new PSU.

The basic task of sample design and maintenance forms a large part of the Section's activities. However, of equal importance is the detailed scrutiny of the results and the research into better methods and procedures. For the labour force surveys, a routine process of calculating the variance as between PSU's is incorporated in the machine tabulation program. This calculation is dependent on the pooling of strata in that but one sampling unit was selected

from each stratum. This gives an exaggeration of the variances, dependent upon the efficiency of stratification. However, since the effectiveness of the first level of stratification for most of the current variables is not thought to be high, it seems unlikely that this exaggeration is important. At the second level of stratification, i.e., area substratification, the variance estimates may be unduly affected.

A labour force survey was taken at the same time as the 1951 Census and this provided the opportunity of a quality check on both the census and labour force methods. This investigation was directed by the Sampling and Analysis Section. The first phase involved the matching of a limited number of individual documents from the two surveys, the noting of differences to the same questions in the two surveys, and the re-enumeration where differences in comparable data occurred. The purpose of the re-enumeration was to determine the reasons for differences.

The problem of discrepancies in enumeration is basic to all household surveys. Thus, the data obtained in the re-enumeration of households are subject to no greater accuracy than that associated with the original surveys. The re-enumeration check does not provide an absolute measure of the number of discrepancies but it does indicate the relative importance of the reasons for discrepancies and provides a similar measurement of whether the discrepancies were due to faulty enumeration in the Census or Labour Force Survey.

This re-enumeration procedure was used in the metropolitan centres of Montreal and Toronto and was applied to approximately 600 households in each centre. The selection of these households was made from the universe of matched households where discrepancies had been discovered. In the majority of cases no reason could be determined for the discrepancies. However, the following reasons did prove to be of significance:

1. The enumerator conducted a hurried interview.
2. The original respondent was unsure of the information.
3. The respondent was in error.

Of greater importance was the distribution of the discrepancies by question asked. Discrepancies in single ages accounted for more than 20 per cent of all the re-enumerated discrepancies while the discrepancies in five-year age groups accounted for less than 12 per cent of all discrepancies. Industry and occupation data did not show serious differences although the majority of the discrepancies in this category was due to the Census enumeration. Distribution of all discrepancies by source of error did not indicate that the Census enumeration was more or less effective than the labour force enumeration.

The second phase involved the matching of all individual and household documents in the two surveys, the hand tabulation of comparable data,

and the tabulation of the number of individuals within matched households that were enumerated in one survey but not in the other. The purpose of this phase was to determine the completeness of coverage and to indicate the degree of difference in the comparable data. The scatter diagrams obtained will indicate the degree of difference but will not provide a measurement of absolute error.

In the analysis of the data obtained in the matching check two types of answers were considered — answers in the Census and Labour Force that matched and answers that did not match. With this information the percentage differences by question can be obtained. The major differences in the two sets of matched data occurred in industry and occupation and in information on dwelling units.

For Canada totals, over 90 per cent of all matched documents provided the same answers for questions on age, class of worker, marital status, war service, and labour force characteristics, while 80 per cent of the cards showed the same answers with respect to industry, somewhat less than 80 per cent matched with respect to the question on occupation.

The information on heating facilities showed somewhat larger differences than in the labour force questions. For example, the differences on the question regarding principal heating facilities differed by somewhat less than 30 per cent, while the differences associated with the question on other heating equipment differed by more than 35 per cent.

The Sampling and Analysis Section also provides assistance in the use of sampling techniques for other Divisions of the Bureau. For example, the design and operational plan for the Canadian Sickness Survey was developed by the Section in conjunction with the Health and Welfare Division. The sample design for the Canadian Sickness Survey is basically the same as the design for the Labour Force Survey. The designs differ in the size of the strata and primary sampling units and in the stratification, which was based on ethnic origin and average income levels rather than on industrial and occupational factors. Except for the province of Newfoundland, the sampling within chosen primary sampling units was directed to obtain the best representation of the unit selected rather than the best representation of the stratum concerned. This latter method, area substratification, was adopted in Newfoundland in order to include the correct proportion of smaller settlements. Even though the difficulty of accessibility for the smaller settlements was of major importance, these settlements were included in the sample not only because they comprised a significant proportion of the population but also because some might be possible pockets of disease.

In addition, the Section acts in a consultant capacity for other departments and agencies outside the Bureau. It has provided advice on the designing of a sample for an air-pollution study in the Detroit-Windsor area and has given technical assistance for a study of heights and weights of the Canadian

population as requested by the Department of National Health and Welfare. Assistance has also been given to the Canadian Broadcasting Corporation in connection with its studies of the distribution of "radio homes" and in the analysis of listener habits.

Regional Offices

Over the past seven years, a flexible field organization has been developed to collect the data from respondents. The core of this organization is the staff in the Regional Offices. The sample for the labour force surveys and most other household surveys carried on by the Division is scattered from St. John's, Newfoundland to Victoria, British Columbia, in over one hundred different areas. Collection of statistical returns from business and industrial establishments may be required anywhere in the country. The largest field task of the Bureau is the decennial census which takes enumerators everywhere in Canada. With the large area to be covered, both time and cost were important factors in deciding upon a Regional Office organization rather than attempting to direct the surveys from any one point.

The country is divided into six regions — Newfoundland, the three Maritime Provinces, Quebec, Ontario, the three Prairie Provinces, and British Columbia. The volume of work for most projects in any one region is directly correlated with the density and concentration of the population. Consequently, the Regional Offices for the various regions were located in the large urban centres where a large part of their work could be conducted by personal contact and telephone. These centres are St. John's, Halifax, Montreal, Toronto, Winnipeg, and Vancouver.

The activities of each Regional Office are directed by a regional statistics officer. The staff is comprised of an assistant and a number of field representatives varying from three to nine depending upon the area and population to be covered. Apart from special assignments, there are three main continuing projects which occupy the time of the regional staff — the labour force and related surveys, the collection of prices data, and the collection of statistical returns from business and industrial establishments. In general, an effort is made to have at least two of the staff completely familiar with the requirements of each project so that absenteeism will not seriously disrupt the work. However, all members of the staff are available for any priority project.

The organization of the field work for a labour force survey commences with the preparation of enumerators' kits in the Regional Office. Keeping in mind the pattern and condition of roads in rural areas and the lines of communication in urban areas, assignments for each enumerator are of a size that can be covered in a seven to ten day period. The documents and instruction booklets are assembled and labelled for each enumerator. For the areas which lie outside the regional centres, field trips

are planned for various members of the staff so that each enumerator will be visited and instructed before each survey. Most of these trips are undertaken by automobile so that better service can be given to rural enumerators. For regional centres, the enumerators are assembled at the Regional Office in classes of about six to receive supplies and instructions.

In any survey, it is important that the data be collected in a uniform manner and consequently the proper instruction of enumerators is essential. Instruction must cover all of the significant points but must not be so long or detailed that the enumerator is overwhelmed or suffers fatigue. Otherwise, he may confuse the instructions or forget vital points. The instruction booklet for the labour force surveys has been reduced in size so that it contains only material relating to the majority of cases which might be encountered. Exceptions are omitted from the instructions and the enumerators are encouraged to submit comments whenever unusual circumstances are met. For inexperienced enumerators, two half-day sessions of instruction have been found most satisfactory and every effort is made to have these sessions separated by at least half a day. Experienced enumerators receive only one re-instruction session of two or three hours to cover points which, upon examination of his previous work, appear to be misunderstood. It is possible to assemble urban enumerators in groups for instruction although rarely are more than six included in any one class. The rural enumerators are more widely scattered and instruction is usually given on an individual basis in their own homes. About 400 enumerators are instructed before each survey.

Locating suitable enumerators is an ever-present problem. In large urban centres the local offices of the National Employment Service are most useful. However, in rural areas, the field representative must depend upon the recommendation of local people such as the bank manager, the township clerk, the priest, or the general merchant. Not infrequently the best suggestions are received from other or former enumerators. At the present time, lists of census enumerators are available but these will become less useful as time goes on.

After enumeration has commenced, the first day's work of new enumerators is checked very closely. In the regional centres, new enumerators report to the Regional Office with their first work. Where necessary, re-instruction is carried out by interview or by mail and if work is still unsatisfactory the enumerator may be replaced. All survey data receive a cursory edit in the Regional Office but this is kept to a minimum to make full use of the mechanical editing in Head Office mentioned below. The returns are checked with quota sheets and forwarded to Ottawa. Daily time and mileage sheets are obtained from each enumerator from which the regional staff prepare claim sheets when the survey is completed.

The collection of prices data is made the primary responsibility of one of the senior field representatives in each Regional Office. In addition, full-time

representatives are located in two other Prairie cities whose primary task is to collect prices data. The information is collected on behalf of the Labour and Prices Division of the Bureau and is used in the compilation of the Consumer Price Index, the Wholesale Price Index, and other indexes measuring economic activity. A representative sample of establishments is covered monthly, quarterly, half-yearly, or annually depending upon the goods sold or services rendered and prices are obtained for a wide range of items. The field representative must be competent in checking the quality of items to see that the price of comparable items is obtained. A large part of his assignment is the maintenance of friendly relations with the personnel in department, chain, and independent stores, as their co-operation is necessary in collecting data which will reflect correctly price and quality changes.

The rent component for the Consumer Price Index is obtained by interviews with householders. The data are collected at the same time as the labour force survey is conducted. When the data are received in the Regional Office, the staff carries out the first processing, and summary totals by cities and provinces are forwarded to Ottawa. This tabulation is done by hand, using check sheets prepared for this purpose.

The collection of statistical returns from business and industrial establishments is a project which continues throughout the year. Most of the data required by other Divisions in the Bureau are collected by mail. However, in a number of instances respondents fail to reply in spite of follow-up letters and requests, and these returns are forwarded to the Regional Offices for collection. This work is co-ordinated in each office by one of the field representatives. After a further attempt by mail from the local Regional Office, interviews are arranged with as many of the non-respondents as possible. Frequently, these interviews are made during instructional trips in connection with the labour force survey but sometimes, if the volume is great, a special trip is arranged for some staff member to collect the returns. In the regional centre, interviews are followed up by telephone calls and in rural areas by telegram. The returns are required by law and the regional officer has the authority to institute legal proceedings to obtain the information. However, almost all respondents co-operate once the purpose and content of the forms are explained and legal proceedings are exceedingly rare.

The Regional Offices, from time to time, undertake special field projects of the Bureau. The most recent example, and the largest to date, was the direction of regional activities for the 1951 Census. Early in the Census planning, it was decided that decentralization of a large part of the operation was necessary in order to avoid an unduly high concentration of staff in Ottawa and to deal quickly with local emergent problems. The methods and procedures used in the 1951 Census are covered in the chapter prepared by the Census Division. Only a brief outline of the Regional Office responsibility will be given here.

The entire field operation was directed from the Regional Offices. As well as engaging clerical staff (numbering about 1600 across Canada), the regular staff was augmented by Ottawa staff experienced in the census, and by experts in machine tabulation drawn from other governments and private industry. A field staff of almost 20,000 was assembled, provided with the necessary materials, and trained. While enumeration was in progress, semi-weekly reports were received regarding each enumerator and the Regional Office was in a position to take remedial action where the work was unduly delayed. All accounts for the field staff were processed through the Regional Offices and paid through a local Treasury Office. This avoided many of the delays in payment that sometimes occurred in previous censuses. After the material was received from the field it was processed in the Regional Offices up to the point of a checked deck of punch cards suitable for tabulation in Ottawa. Finally, the original documents were all microfilmed in order to save space and shipping expenses.

The general co-ordination and administration of the Regional Office is in the hands of the regional statistics officer and his assistant. Space and office equipment is provided through the local office of the Department of Public Works and staff replacements through the local office of the Civil Service Commission. All changes in space or staff are made only after reference to Head Office although final local negotiations are left in the hands of the regional statistics officer. The Regional Office operates an imprest account in a local bank through which the running expenses of the offices are met. These expenses include telephone service, incidental supplies, and travelling expenses of regional staff. On the other hand, claims submitted by temporary enumerators and salaries for regional staff are paid from Ottawa upon documents submitted by the Regional Office.

Operations Section

It is the responsibility of the Operations Section to follow through on the planning of the Sampling and Analysis Section and the field work of the Regional Offices and to process the survey data. The project which occupies most of the time of the Section is the processing of the results of the labour force surveys.

At the beginning of 1950, new machines became available which altered the procedures considerably. These were tested in the labour force survey for over a year before they were used in the 1951 Census and the methods developed have been in continuous use for several surveys.

The enumerators record the particulars of each person on a mark-sense document. This is a piece of cardboard about seven inches square, printed on both sides, which provides spaces describing the various characteristics of the respondent. In appropriate spaces the enumerator makes a special pen or pencil mark which will carry an electric current.

The card is "read" by a machine known as the document punch which produces a punch card with holes in positions corresponding to the marks on the document. The punch cards are checked mechanically to see if the entries are consistent and the cards containing unacceptable combinations of information are rejected. The Operations Section corrects these rejected cards through reference to the original documents and the documents from previous surveys and returns them for re-punching.

The completeness of coverage is next checked and adjustments made to compensate for areas which might not have been completely enumerated because of bad weather or other unforeseeable circumstances. The sampling ratio being 1 in 100, the obvious method of estimating totals would be to multiply by 100. While mathematically unbiased, such a method would be subject to greater sampling error than is necessary in view of the fact that more accurate figures on the total population of the country by age, sex, and province are known from other sources. Thus, the sample is used not to estimate the total but to estimate the proportion into which the given total is to be divided. The Operations Section makes the necessary calculations based on the regular estimates of population for intercensal years and arranges to have the punch card deck adjusted.

The final task is the preparation for publication of the material received from the Mechanical Tabulation Division. The data must be assembled and compiled and then compared with other available data to detect discontinuities and inconsistencies which are significant and which should be drawn to the attention of the users.

Following each labour force survey, a careful analysis is made of the types of error on the punch cards which were rejected in the mechanical edit. These are related to individual enumerators and the information is forwarded to the Regional Offices. In this way the field representatives know what aspects to stress during re-instruction so that particular types of errors are not carried forward from survey to survey.

There are numerous other surveys processed by the Section. A regular survey of residential construction is carried on by mail direct from Ottawa with the Regional Offices being responsible only for the location of respondents. Annual surveys of household equipment and facilities are a regular part of the survey program. The staff is also available for any large clerical operations initiated by the Sampling and Analysis Section or the Regional Offices.

Administration

With offices located from coast to coast, a distance of over 4,000 miles, and operations taking the staff into all parts of the country, the co-ordination of the activities of the Division presents difficulties not found in centrally located organizations. This

might be considered under three main headings: maintenance of uniformity of practice; full utilization of resources; and administrative service.

The maintenance of uniformity of practice requires continuous vigilance. It is essential that there is complete understanding of and compliance with the instructions issued concerning any project. The data must be collected under uniform conditions and the survey plan, the specific operations, and the timing of any project must be fully appreciated and understood by all field staff. Although some latitude is permitted to meet local conditions, the regional officer must be sure that there will be no significant variation in the results because of differing practice in different Regional Offices. Co-ordination in this regard is achieved by annual conferences in Ottawa of the regional statistics officers, by orientation visits to Ottawa of other senior regional staff, and by periodic visits to Regional Offices of senior headquarters staff.

To maintain full utilization of resources, all projects undertaken by the Special Surveys Division are cleared through the Director. In this way, different tasks can be programmed so that, as much as possible, all will be accommodated when required. In

many instances, it is necessary to postpone some project because the staff is already fully occupied and cannot accept additional work.

An example of co-ordination of work is the collection of statistical returns from establishments. All reports for collection are cleared through the administrative organization of the Division at Ottawa so that they will be forwarded in a uniform manner to the Regional Offices at a time which appears convenient for collection. All questions of subject matter and timetable are cleared back through the same organization to minimize the possibility of confusion.

All requests for additional space or office equipment are handled by the administrative organization in Ottawa. However, when the main points have been cleared, the local offices complete the negotiations. For all but census surveys, the accounts for enumerators are handled by the headquarters staff which also maintains a check on the imprest account and the personnel in the Regional Offices.

As the various offices of the Division are in constant and rapid communication with each other, the Division is able to meet new requirements and problems as they arise.

DOMINION BUREAU OF STATISTICS
SPECIAL SURVEYS DIVISION

Chart showing function
and organization

DOMINION BUREAU OF STATISTICS

SPECIAL SURVEYS DIVISION

Directs field surveys relating to such topics as employment, prices, expenditure patterns and housing; directs field operations of DBS; assists other Divisions in the use of sampling techniques. The staff of the Division numbers 104.

Director, A. B. McMoran, Statistician Grade 7

General Staff - 4
2 Stenographers Grade 2A
1 Typist Grade 2A
1 Office Boy

REGIONAL OFFICES

OPERATIONS SECTION

Supervises the processing operations, the compilation of data and the preparation of reports in connection with surveys conducted by the Division; supervises field operations in the headquarters area; assists in planning and organizing future activities of the Division. The staff of the Section numbers 20.

Chief, W. A. Nesbitt, Administrative Officer Grade 2

SAMPLING AND ANALYSIS SECTION

Supervises the design and maintenance of samples for use in surveys conducted by the Division; assists through consultation in the design of samples for other Divisions; directs research projects with regard to variance calculation and related mathematical problems; assists with the technical aspects associated with planning and organizing future activities of the Division. The staff of the Section numbers 13.

Chief, D. K. Dale, Statistician Grade 3

FIELD ADMINISTRATION

Supervises the administrative aspects of the field operations of the Bureau, maintains control of office accommodation and equipment for regional staff; plans and directs the collection of delinquent annual, quarterly and monthly reports for other Divisions. The staff numbers 3.

Staff - 3
1 Head Clerk
1 Clerk Grade 3
1 Clerk Grade 2A

Halifax

Supervises field operations in the Maritime Region.
Regional Officer, A. B. MacKay, Administrative Officer Grade 2.

Staff - 7
3 Principal Clerks
2 Clerks Grade 4
1 Stenographer Grade 2A
1 Statistical Officer (Saint John)

Montreal

Supervises field operations in the Quebec Region.
Regional Officer, R. St. John, Administrative Officer Grade 2.

Staff - 12
4 Principal Clerks
4 Clerks Grade 4
1 Statistical Officer
1 Stenographer Grade 2A
1 Typist Grade 2A
1 Statistics Officer (Quebec)

St. John's

Supervises field operations in the Newfoundland Region.
Regional Officer, F. Kirby, Administrative Officer Grade 2.

Staff - 6
3 Principal Clerks
2 Clerks Grade 4
1 Stenographer Grade 2A

Toronto

Supervises field operations in the Ontario Region.
Regional Officer, A. G. Metcalfe, Administrative Officer Grade 2.

Staff - 13
4 Principal Clerks
4 Clerks Grade 4
1 Stenographer Grade 2A
1 Typist Grade 2A
1 Statistics Officer (Hamilton)
1 Statistics Officer (Edmonton)
1 Statistics Officer (Regina)
1 Statistics Officer (Windsor)

Winnipeg

Supervises field operations in the Prairie Region.
Regional Officer, K. A. Laidlaw, Administrative Officer Grade 2.

Staff - 13
3 Principal Clerks
4 Clerks Grade 4
1 Stenographer Grade 2B
1 Typist Grade 2A
1 Principal Clerk (Saskatoon)
1 Principal Clerk (Edmonton)
1 Statistics Officer (Regina)
1 Statistics Officer (Calgary)

Vancouver

Supervises field operations in the British Columbia Region.
Regional Officer, R. M. Kincaid, Administrative Officer Grade 2.

Staff - 6
3 Principal Clerks
2 Clerks Grade 4
1 Stenographer Grade 2B

PLANNING UNIT

Staff - 1
1 Head Clerk

PROCESSING UNIT

Staff - 1
1 Clerk Grade 4

HOUSING UNIT

Staff - 1
1 Clerk Grade 3

FIELD UNIT

Staff - 1
1 Clerk Grade 2A

COMPILATION UNIT

Staff - 1
1 Clerk Grade 3

SAMPLING UNIT

Staff - 1
Technical Officer Grade 3

ANALYSIS UNIT

Staff - 1
Statistician Grade 2

1 Clerk Grade 4
7 Clerks Grade 2B
5 Clerks Grade 2A
1 Clerk Grade 1

5 Statisticians Grade 1
2 Clerks Grade 4
2 Clerks Grade 3
1 Clerk Grade 2A

Number, Periodicity and Nature of Reports

Report	Number	Periodicity	Contents
Labour Force Survey:			
The Labour Force 1945-1949	1	Published 1950	Summary tables of previously published Labour Force Bulletins based on a quarterly survey.
The Labour Force 1945-1952	1	Occasional	As above — revised figures.
Labour Force Bulletin	1	Quarterly	Summary and description of labour force as pertaining to survey periods by age, sex, region, and occupational status.
Housing Survey:			
New Residential Construction (previously known as "Housing Bulletin")	1	Monthly	Cumulative tables of starts and completions of new residential construction based upon calendar year measurement.
Survey of Multiple Occupancies in Canadian Cities of Over 30,000	1	Published 1946	Number of families per dwelling.
Statistical Report on Unfinished Dwellings in Canada	1	Published 1946	Number of unfinished dwellings.
Restricted Circulation:			
Progress of Veterans Civil Re-establishment	1	Published 1946	
Other Publications:			
Heating Facilities	1	Published 1951	Summary of type and number of heating facilities and fuel used by region.
Household Equipment	1	Published 1950	Summary of heating and sewing equipment by type and region.
Heating Facilities, Radios and Telephones in Canadian Homes	1	Published 1947	Summary of heating facilities, radios and telephones, by types and region.
Household Equipment	1	Published 1948	Summary of cooking, washing, refrigeration, vacuum cleaner facilities, and radios by type and region.
Radios and Household Electrification	1	Published 1949	Summary of electrified and radio equipped homes by region.
Statistical Report on the Occurrence of Non-fatal Accidents and Fires on Canadian Farms	2	Published 1946, 1947	
Report on the Incidence of Arthritis	1	Published 1947	

DOMINION BUREAU OF STATISTICS

MECHANICAL TABULATION DIVISION

The function of this Division is to process mechanically the information supplied by other Divisions of the Bureau and to provide them with the statistical tabulations required for the reports. To a limited extent it also services other government departments and agencies.

Method of Operation

The operational procedure is as follows:

1. In consultation with the Directors or Chiefs concerned:
 - (a) The basic tabulations are determined in so far as is possible at the time.
 - (b) The method of tabulation is decided upon (i.e. punched card, comptometer, adding machine or peg board).
 - (c) The source document is drafted and approved, taking into account problems of response and tabulation.
2. The Planning and Scheduling Unit of the Division makes a careful study of the problem and:
 - (a) Outlines in a general way the card punching and card verification procedures.
 - (b) Drafts the tabulating procedure in basic outline.
 - (c) Sets up a production schedule specifying target dates for completion of card punching and tabulation.
 - (d) Assigns the job to the supervisor of the Key Punching Unit for card punching and card verification and to a tabulating machine supervisor for production of the required tabulations.
3. The supervisor of the Key Punching Unit:
 - (a) Drafts detailed card punching and card verifying instructions.
 - (b) Supervises the actual production of punched cards.
4. The tabulating machine supervisor:
 - (a) Drafts detailed tabulation instructions.
 - (b) Supervises the production of tabulations.

In order to ensure accuracy, check features are incorporated throughout the tabulating procedure wherever possible. The most commonly used checking procedures include:

- (a) Verification of the punched information by an independent operator using a card verifying machine.
- (b) Machine editing of punched cards to locate errors, omissions and inconsistencies. These may be the result of inaccurate information or improper coding.
- (c) Checking of the totals obtained from each tabulation against "control totals", established either from a preceding tabulation or from some independent source.

Many monthly, quarterly, and annual tabulation programs are carried out by the Division. As a general rule, once the planning has been completed and the tabulation program established, these operations become routine and a fixed production schedule can be maintained without much difficulty. However, special tabulating projects are continually arising as a result of special surveys or inquiries. These present fresh problems and require particular care in planning and in supervision.

Mechanical Equipment

The operating equipment of the Mechanical Tabulation Division is shown below. It includes some of the most recently developed punched card equipment.

1. Card Punching Machines (47)

These machines are operated by trained operators using a numeric key board or an alphabetic key board almost identical with that of a typewriter. Numeric or alphabetic information is recorded in a standard size card by means of the pattern of punched holes which these machines produce.

2. Card Verifying Machines (29)

These machines are operated by trained operators using key boards similar to those on card punching machines. As the punched cards progress through the machines, the operator depresses keys corresponding to the hole that should have been punched in the cards. A light flashes as a signal whenever a hole punched in the card does not correspond to the key which is depressed.

3. Card Sorting Machines (28)

These machines sort cards into any order either numeric or alphabetic.

4. Accounting Machines or Tabulators (14)

These machines accumulate numeric information from punched cards and print totals automatically for designated groups of punched cards. They can, at the same time, list part or all of the information included on the punched cards. The machine is directed to perform the above operations by means of wiring on its control panel. All information is printed on continuous forms which automatically feed through the machine.

5. Electronic Statistical Machines (2)

These machines can count the number of punched cards into a maximum of 60 different categories without the necessity of sorting the cards into these category groups. (They are therefore particularly adaptable to population

DOMINION BUREAU OF STATISTICS
MECHANICAL TABULATION DIVISION

Chart showing function
and organization

DOMINION BUREAU OF STATISTICS

MECHANICAL TABULATION DIVISION

All major tabulating work of the Bureau (except census) is centralized in this Division. Certain other government departments and agencies are serviced when time and equipment are available. Data are analyzed and basic tabulations planned in consultation with Directors or Chiefs concerned, and appropriate methods of tabulation (punched card, comptometer, adding machine, or peg board) determined. The staff of the Division numbers 174.

Director, C. Scott, Administrative Officer Grade 6
Assistant Director, W.I. Moore, Administrative Officer Grade 4

General Staff - 4
2 Typists Grade 2A
2 Messengers

PRODUCTION SUPERVISOR

Responsible for planning, scheduling and production of all punch card tabulations (except census).

Supervisor, Technical Officer Grade 4.

CALCULATING UNIT

Responsible for the production of comptometer, peg board and adding machine tabulations.

Staff - 22

1 Principal Clerk
3 Office Appliance Operators Grade 3
6 Office Appliance Operators Grade 2B
8 Office Appliance Operators Grade 2A
4 Office Appliance Operators Grade 1

Operating Equipment:

9 Comptometers.
10 Burroughs Electric Calculators.
8 Burroughs Duplex Electric Adding Machines.

TABULATING UNIT 1

Servises Health and Welfare Division and General Assignments Division.

Staff - 23

1 Principal Clerk
4 Office Appliance Operators Grade 3
7 Office Appliance Operators Grade 2B
8 Office Appliance Operators Grade 2A
3 Office Appliance Operators Grade 1

Operating Equipment:

3 Tabulators
3 Sorters
6 Punches
4 Verifiers
1 Interpreter

TABULATING UNIT 2

Servises International Trade Division, Labour and Prices Division, National Film Board, and Department of Citizenship and Immigration.

Staff - 14

1 Clerk Grade 4
2 Office Appliance Operators Grade 3
9 Office Appliance Operators Grade 2B
1 Office Appliance Operator Grade 2A
1 Office Appliance Operator Grade 1

Operating Equipment:

3 Tabulators
8 Sorters

TABULATING UNIT 3

Servises Labour and Prices Division, and Public Finance and Transportation Division.

Staff - 15

1 Clerk Grade 4
2 Office Appliance Operators Grade 3
10 Office Appliance Operators Grade 2B
2 Office Appliance Operators Grade 2A

Operating Equipment:

3 Tabulators
9 Sorters

TABULATING UNIT 4

Servises International Trade Division.

Staff - 10

1 Clerk Grade 4
1 Office Appliance Operator Grade 3
3 Office Appliance Operators Grade 2B
4 Office Appliance Operators Grade 2A
1 Office Appliance Operator Grade 1

Operating Equipment:

5 Tabulators
3 Sorters

E. S. M. TABULATING UNIT

Performs all tabulations adaptable to electronic statistical machines.

Staff - 7

1 Clerk Grade 4
1 Office Appliance Operator Grade 3
15 Office Appliance Operators Grade 2B
2 Office Appliance Operators Grade 2A

Operating Equipment:

2 E. S. M. Tabulators
3 Sorters
2 Summary Punches

KEY PUNCH UNIT

Punches cards used for statistical tabulations.

Staff - 69

1 Clerk Grade 4
7 Office Appliance Operators Grade 3
15 Office Appliance Operators Grade 2B
29 Office Appliance Operators Grade 2A
7 Office Appliance Operators Grade 1

Operating Equipment:

41 Key Punches
23 Verifiers
1 Interpreter

AUXILIARY MACHINE UNIT

Servises all Tabulating Units with operations on special equipment listed below.

Staff - 7

2 Office Appliance Operators Grade 3
2 Office Appliance Operators Grade 2B
3 Office Appliance Operators Grade 2A

Operating Equipment:

3 Collators
3 Reproducers
1 Document Punch
1 Summary Punch
2 Calculating Punches
2 Interpreters

tabulations). At the same time they can carry out an independent sortation of the punched cards. They will "edit" cards for omissions, errors in coding, or inconsistencies (e.g. a person with an occupation requiring a great deal of training such as a doctor must have a predetermined minimum of years of schooling punched in the space for education). Such cards are rejected by the machine automatically. The machine receives its direction by means of wiring on the control panel.

6. Reproducing Punches (3)

By means of this equipment all or any part of the information punched in one set of cards can be punched into another set of cards. Information common to a group of cards can be "gang punched" into all these cards. Information marked by means of short stroke marks on standard-size punched cards using a special pencil or ink can be "read" by these machines and punched into the same cards. Wiring of a control panel determines the operations that the machines will perform.

7. Collators (3)

These machines perform several different operations — merging two sets of cards together in a specific order; selecting from two sets of cards pairs which match and also selecting unmatched cards from each set; checking the sequence of a set of cards either numerically or alphabetically. Wiring of a control panel determines the operations these machines will perform.

8. Calculating Punches (2)

This equipment reads information punched in cards, performs simple and complex operations involving addition, subtraction, multiplication or division and then punches the result in the cards. Wiring of a control panel determines the operations the machine will perform.

9. Document Punch (1)

Information marked by means of short stroke marks on a standard-size document (twice the size of a standard punch card), using a special

pencil or ink, is "read" by this machine and punched in a standard-size punch card. This machine has the advantage of eliminating the use of key punching machines in operations where the marking of a document is considered to be practical. Direction for these operations is received through wiring on the control panel.

10. Summary Punches (3)

These machines can be connected to the accounting machines or electronic statistical machines in order to produce summary punched cards simultaneously with the printing of totals by the parent machine.

11. Interpreters (4)

By means of these machines information punched in cards can be printed along the top edge of the cards for easy reference.

Production Records

From information supplied daily by each operator on "production cards" the Division is able to provide periodic analytical reports of its operations. These include:

- (a) A monthly statement of costs chargeable to each tabulating project.
- (b) A monthly statement of productive machine hours for each unit of equipment.
- (c) A monthly production statement for each card punching operator and card verifying operator together with each operator's error percentage.

The first of these statements is used by the Cost Control Section in assigning tabulating costs to the Section or Division of the Bureau as well as to outside customers. The second statement indicates the use that is being made of each unit of equipment and hence whether certain units may be released or whether a shortage of certain types of equipment is developing. The third statement enables the supervisors to rate card punching and card verifying operators as to their ability and to take appropriate action to ensure that satisfactory production levels are maintained.

DOMINION BUREAU OF STATISTICS

INFORMATION SERVICES DIVISION

The Information Services Division is organized in four Sections: The Canada Year Book, Press and Publicity, Publications Distribution, and The Library. It is concerned with the preparation of publications of a general nature, i.e., those with material originating in all or several of the subject Divisions, with the distribution and stocking of all Bureau publications, and the dissemination of statistical information in general.

Canada Year Book Section

The Canada Year Book Section has three related but separate functions: editorial production, economic mapping and charting, and focal unit inquiries.

Editorial Production

The main work of the Section is the production of *The Canada Year Book*, which normally appears annually, in both English and French. The Year Book constitutes the official record of Canada's growth and economic progress since Confederation and is a broad medium of information on all aspects of the nation's business, its resources, institutions, and social and economic condition. It is widely used as a reference book by government officials, parliamentarians, businessmen, and students, and is the main representative publication of the Government of Canada throughout the world.

The Canada Handbook, also published annually in English and French, is as important a medium of information in its own sphere as *The Canada Year Book*. Though it covers substantially the same field, it is much less detailed, written in more popular style, profusely illustrated, and generally prepared with a view to attracting the interest of the general public and the younger elements of the population and to giving them a brief and interesting description of Canada's natural resources, the development of those resources, the government and its services, and the general well-being and social advancement of the country. This publication is widely distributed throughout the world and has from time to time been translated into other languages – Spanish, Portuguese, and Italian.

The work of the Section includes also the editing of the quarterly and annual reports of the Bureau and editorial assistance to other Divisions of the Bureau as well as other departments of government, particularly in connection with illustrated publications.

Economic Mapping and Charting

Apart from proof-reading and checking of textual and statistical material for its publications, certain members of the Section were trained to act as the

nucleus of a staff to prepare a series of economic maps on demography and agriculture based on the 1941 Census. After considerable progress, this work was postponed but is again under consideration based on 1951 Census data. In the meantime, all the economic maps required in the Bureau as well as the charts for *The Canada Year Book* and *The Canada Handbook* and charts and maps required from time to time for many other publications of the Bureau and outside departments, are compiled in the Section.

General Inquiries – Focal Unit

The Section conducts an information service through which regular series of statistics are supplied each month to a number of international organizations. Information is also prepared for about 25 year-books, almanacs and encyclopedias published in Canada and in other countries. Individual inquiries of a general nature, which cannot be completed by any one Division of the Bureau, are also handled in the Section. A key-card filing system is maintained which records and classifies information that may be of interest for future use – material originating in a wide variety of national and international publications or co-ordinated in the Section.

Co-operative Arrangements and General Procedure

The information published in *The Canada Year Book* and in *The Canada Handbook* is almost exclusively official information obtained from government sources, federal and provincial. Close contact is therefore maintained with divisions or branches of most Federal Government departments and with numerous branches of the different Provincial Governments. Also, a good part of the statistical material is obtained from the respective Divisions of the Dominion Bureau of Statistics itself. The Canada Year Book Section follows a uniform editorial policy so that much of the material received from these many sources must be rewritten or retabulated to conform with Year Book practice. This is particularly true of the textual material for the Handbook which is written from a point of view rather unusual for statistical presentation. The illustrative material for the Handbook is secured from many sources, as is evidenced by the list of acknowledgements given in the publication. Contact is maintained with the National Film Board, a number of departments and agencies of the Federal Government, the information and publicity bureaus and other departments of the Provincial Governments, editors of newspapers and magazines as well as commercial photographers. The major part of the data required by the information service of the Section is secured from Dominion Bureau of Sta-

tistics sources, either from the published reports or direct from the Divisions concerned, although in many cases a good deal of research is required into other publications, federal, provincial, and international, to secure the desired information. In the central focal point files, which form part of the key-card filing system, replies to all inquiries are cross-referenced by subject and correspondent, thus eliminating duplication in searching for answers to requests for similar information.

The preparation of *The Canada Year Book* takes approximately one year to complete, although one edition overlaps the next to some extent. The program of work is arranged in such a way that the latest information available on each subject, within, of course, a limited period, can be incorporated. The time of preparation for *The Canada Handbook* is about five months, exclusive of the securing of the illustrations which must be started about three months before the textual material. Barring delays in the actual printing and binding process, both publications are scheduled to appear in the spring of each year.

Press and Publicity Section

The functions of this Section may be broadly summarized as follows:

1. To obtain the widest possible distribution of current Bureau information through the daily and periodical press.
2. To promote the circulation of Bureau reports so that the information they contain may reach the greatest possible number of persons to whom they may be useful.
3. To the above ends, to establish and maintain good public relations, including close and friendly liaison with representatives of the press (daily, weekly, and periodical), and to inform the public on the services and publications of the Bureau.

These functions are performed through the publication of the *D.B.S. Daily Bulletin* and the *D.B.S. Weekly Bulletin*, through frequent contact with the press directly and by mail through assisting writers in the preparation of articles and supplying special articles as opportunity offers, through the preparation of special publicity material and through arrangements for displays of Bureau publications as opportunity offers. These are dealt with in more detail below.

The Daily and Weekly Bulletins

The *Daily Bulletin*, issued both in English and French, presents news summaries of each day's issues of reports, together with news items of releases not issued as separate reports. Each issue contains a list of the reports produced on the day of issue.

The *Weekly Bulletin*, issued both in English and French, presents a summary of the *Daily Bulletins* issued during the week with the addition of a highlights summary.

Both bulletins carry a "news notes" supplement providing brief bits of information that serve as short fillers for newspaper and magazine use.

Another significant feature of the two bulletins is their overall coverage of the current information issued by the Bureau, so that anyone receiving them may keep up-to-date on all that has been released.

Copies of the *Daily Bulletin* are delivered at 3 p.m. each day (12 noon on Saturdays) to the Canadian Press, the British United Press, and members of the Parliamentary Press Gallery (in which most of the larger daily newspapers of Canada are represented, as well as a considerable number of foreign newspapers). Such contents of the *Daily Bulletin*, as are of general news interest, provide the basis (frequently supplemented by local or other detail) of news stories carried by both press and radio.

Distribution to the Press, while emphasized here because of its part in the widespread use of Bureau information in Canadian daily newspapers, is only a small part of the total distribution of the *Daily Bulletin*. It is also widely distributed among government officials, business firms, trade and other associations, and individuals who wish to keep closely informed on what has been released by the Bureau.

Distribution of the *Weekly Bulletin* is smaller but equally diversified. Generally it is preferred to the *Daily Bulletin* by editors of trade papers and other periodical publications and the financial editors of daily newspapers, both in Canada and other countries. It goes also to Canadian diplomatic and trade representatives abroad, educational institutions and libraries, financial and manufacturing firms, railways, etc.

Liaison with Press

The Section augments its prompt delivery of the *Daily Bulletin* to press representatives in Ottawa by supplying additional information by telephone or otherwise or by directing the inquirer to the Bureau official who can best do so.

There is much information issued by the Bureau that is not of general interest but is of interest to persons in special fields of activity served by business and trade papers and other periodicals. The Section accordingly devotes special effort to ensuring that the editors of such publications are kept informed of, and receive, the publications containing information applying to the particular fields they serve. Dissemination of Bureau information through such specialized channels ensures its reaching a much greater distribution than could be attained merely by the distribution of the reports from which it is drawn.

General Publicity

General publicity takes various forms. The Section supplies to newspapers and periodicals special articles on request, or as opportunity offers, on the work or services of the Bureau. Preferably, it

seeks to encourage and assist outside writers to prepare such articles, and it supplies photographs and other illustrative material. From time to time, it supplies special material for broadcast use, initiates or assists in arrangements for displays of Bureau publications at annual conventions, and plans or co-operates in planning informative leaflets, etc.

During the 1951 Census, the Section organized the distribution of material on a weekly basis to daily and weekly newspapers, farm papers, and a variety of other publications throughout Canada, and assisted in the supply of radio broadcast material, the distribution of posters and other Census advertising material.

Publications Distribution Section

The Publications Section is primarily concerned with the distribution of the more than 400 publications of the Bureau in accordance with the general principles laid down by the Bureau's Advisory Board on Publications. Aside from such general works as the annual *Canada Year Book* and the annual *Canada Handbook*, printed by letterpress in editions of 16,000 and 110,000, respectively, the Bureau's publications are produced almost entirely by the photo-offset process in the Printing Unit maintained by the Queen's Printer in the Dominion Bureau of Statistics.

These publications in the main use a format of 11" by 8½", and embrace the following categories:

- (a) Reports – annual, quarterly, seasonal, and monthly publications of basic and wide interest and importance, numbering about 300.
- (b) Memoranda – periodical releases of more limited or specialized interest, numbering about 100.
- (c) Reference Papers – occasional releases on specialized topics, usually of a research nature, a dozen or so each year.

The Section maintains up-to-date mailing lists for the Reports, Memoranda and Reference Papers, and apart from a limited amount of free distribution to libraries, the press, certain government officials and co-operating organizations, distributes them at very moderate pricing. (Special compilations, multi-graphed to meet the needs of a few inquirers, are filed and made available on a fee basis). The Queen's Printer sells the *Canada Year Book*, the *Canada Handbook* and a few of the other publications, but the distribution of the great majority of reports is made by the Publications Distribution Section of the Bureau. In the case of publications for which responsibility is shared, the Publications Distribution Section maintains liaison with the Sales and Distribution Branch of the Department of Public Printing and Stationery.

The pricing of publications is based on cost of paper and press work only; costs of compilation are not included in the list prices in order to keep the information within the financial reach of as wide a public as possible. On the other hand, a charge is considered necessary to avoid wasteful distribution

and irresponsible requests. An inclusive subscription to all Bureau Reports is available at a yearly rate of \$30.00, to all Memoranda for \$15.00, and to all Reference Papers for \$5.00. In addition, a separate mailing list for each publication is maintained, and approximately 1,000,000 envelopes or labels are addressed each year by the mechanical equipment used to maintain the subscription records.

The Section carries out the work involved in storing, packaging, mailing, invoicing and accounting, as related to the distribution of the various publications. While over half of the Bureau's publications are annual, the number issued with greater frequency makes the total number of documents published in a year about 2,500. A card index record of each publication is maintained, showing the number of copies of each issue produced and the disposition of them, so that it is possible to determine the size of printing required for each new issue.

A list of current publications of the Dominion Bureau of Statistics is available from Publications Distribution Section on request. Requests or orders for publications number about 100 on the average working day.

The Library

The Library of the Dominion Bureau of Statistics is one of the larger government libraries in Ottawa and the central collection of statistical material in Canada. At present, the collection contains over 100,000 volumes and pamphlets, and includes not only a comprehensive collection of the official publications of the Federal and Provincial Governments, but also statistical publications of all foreign countries, of international organizations such as the United Nations and its agencies, etc., as well as statistical journals published by private organizations and statistical societies. Over 60,000 items, including periodical numbers, are received in a year, the majority in exchange for the publications of the Bureau. Of the 1,300 periodicals received regularly, approximately 500 are official statistical publications of foreign governments.

The Library serves the staff of the Bureau and is used extensively by officials of government departments and other individuals who rely on its resources of statistical material. All periodicals received are circulated to members of the Bureau staff interested in receiving them regularly. The material in the Library is available to research workers and students and inter-library loans are made to university and research libraries in Canada and the United States. The Library does considerable reference work, the questions ranging from those answered from standard reference sources to searches for elusive or complicated statistical information. Bibliographies for many subjects are compiled on request.

The Library is classified according to the Brussels expansion of the Dewey Decimal system. The official publications received from each country are shelved in a special section for that country;

DOMINION BUREAU OF STATISTICS
INFORMATION SERVICES DIVISION

Chart showing function
and organization

DOMINION BUREAU OF STATISTICS

INFORMATION SERVICES DIVISION

Responsible for The Canada Year Book, Press and Publicity, Publications Distribution, and Library. It is concerned with the preparation of publications of a general nature, i.e., those with material originating in all or several of the subject Divisions, with the distribution and stocking of all Bureau publications, and the dissemination of statistical information in general. The staff of the Division numbers 43.

Director, J.E. Robbins, Statistician Grade 7

1 Clerk Grade 2A

CANADA YEAR BOOK SECTION

Planning, revision, editing and production of The Canada Year Book and the Official Handbook Canada. Editing special material, such as the Annual Report of the Bureau.

Compiling data, planning layouts, checking plotted material, for economic maps and charts for the above and other publications of the Bureau and occasionally for other government departments.

Compiling and revising statistical and other factual information for various national and international annuals, almanacs, and encyclopedias. The dispensing of information to international and national organizations and in response to general inquiries from individuals. The staff of the section numbers 13.

Chief, C.C. Lingard, Editor Grade 3

1 Clerk Grade 2B

PRESS AND PUBLICITY SECTION

Preparation of the D.P.S. Daily Bulletin and Weekly Bulletin, distribution of current Bureau information through the daily and periodical press, maintain good public relations and publicize the work, services and publications of the Bureau; preparation of feature articles and special projects. The staff of the section numbers 4.

Chief, J.E. Mackay, Editor Grade 3

1 Editor Grade 2
1 Editor Grade 1
1 Typist Grade 2A

PUBLICATIONS DISTRIBUTION

The distribution of Bureau publications; the maintenance of subscription records and an up-to-date index of Bureau publications, the maintenance and revision of mailing lists; correspondence, storage, packaging, mailing, and accounting pertaining thereto; liaison with the Sales and Distribution Section of the Department of Public Printing and Stationery respecting Bureau publications. The staff of the section numbers 14.

Supervisor, Principal Clerk
1 Clerk Grade 3
3 Clerks Grade 2B
3 Clerks Grade 2A
2 Clerks Grade 1
1 Stenographer Grade 2A
1 Typist Grade 2A
1 Office Appliance Operator Grade 2A
1 Messenger

THE LIBRARY

The organization, administration, servicing and maintenance of a reference and circulating library of statistical material relating to the Dominion Bureau of Statistics and Canadian Government Departments in particular, and to other nations in general. Provision of research facilities, inter-library loans, and information services of a statistical nature. The staff of the Library numbers 8.

Librarian, B.A. Ower, Librarian Grade 3

PROOF-READING MACHINE CHECKING ECONOMIC MAPPING AND CHARTING UNIT

Staff - 7

Supervisor, Clerk Grade 4
1 Clerk Grade 3
1 Clerk Grade 2B
1 Clerk Grade 2A
2 Economic Mapping Clerks Grade 2A
1 Typist Grade 2B

EDITORIAL UNIT

Staff - 4

1 Editor Grade 2
1 Principal Clerk
1 Clerk Grade 4
1 Clerk Grade 2B

FOCAL UNIT GENERAL INQUIRIES

Staff - 2

Supervisor, Clerk Grade 4
1 Clerk Grade 2A

CATALOGUING

Staff - 3

1 Librarian Grade 2
1 Librarian Grade 1
1 Clerk Grade 2A

REFERENCE AND CIRCULATION

Staff - 3

1 Librarian Grade 1
1 Clerk Grade 2B
1 Clerk Grade 1

CLERICAL

Staff - 1

1 Clerk Grade 3

thus the basic arrangement of the statistical material is a geographical one. The card catalogue includes a classified subject catalogue, thus constituting a record of all the resources available in convenient form in the Library on any one subject. Besides the official statistical and government publications, there is a section containing general works on economics and statistical methods, other textbooks, as well as the standard dictionaries and encyclopaedias. Among the countries whose statistical publications are particularly well repre-

sented in the Library are the United Kingdom, the United States, the British Commonwealth countries and a majority of the European nations.

The Library is the official depository of the publications of the Bureau and contains a complete collection of all publications ever published by the Bureau and its predecessors. It prepares for publication each year a list of the current publications of the Bureau.

Number, Periodicity and Nature of Reports

Report	Number	Periodicity	Contents
Canada Year Book Section:			
Canada Year Book	1	Annual	The official record of Canada's growth and economic progress since Confederation. It provides information on all aspects of the nation's business and resources, institutions, and social and economic conditions. (Over 1,200 pages).
Canada Handbook	1	Annual	Covers substantially the same field as The Canada Year Book but is much less detailed, written in more popular style and profusely illustrated. It gives a brief and interesting description of Canada's natural resources, the development of these resources, the government and its services, and the general well-being of the country.
Annual Report of the Dominion Bureau of Statistics.	1	Annual	Contains the report of the Dominion Statistician on the activities of the Dominion Bureau of Statistics for the fiscal year followed by a detailed review of the work of the Divisions and Sections.
Press and Publicity Section:			
D.B.S. Daily Bulletin	1	Daily	Presents news summaries of each day's releases of the Bureau and also news items of releases not issued as separate reports; also a list of the reports produced on the day of issue.
D.B.S. Weekly Bulletin	1	Weekly	Presents a summary of the Daily Bulletins issued during the week with the addition of a "highlights" summary. Both the Daily and Weekly Bulletins carry a "news notes" supplement providing brief bits of information that serve as short fillers for newspaper and magazine use.
The Library			
Current Publications of the Dominion Bureau of Statistics.	1	Annual	List of publications of the Bureau by Divisions and Sections.
Publications Received by the Library	1	Monthly	Numbered list of new material received each month arranged geographically and alphabetically. Limited distribution.

DOMINION BUREAU OF STATISTICS

RESEARCH AND DEVELOPMENT DIVISION

The Research and Development Division of the Bureau of Statistics is a postwar development initiated on the recommendation of an interdepartmental committee composed of senior government officials. Its fields of responsibility include the National Accounts, indexes of physical volume of production, and other series combining primary data of the Bureau and other agencies into synthetic aggregates; the development of new economic statistics to fill gaps in the basic data for the National Accounts and for other purposes; special studies of existing fields of economic statistics with a view to improvement in quality; continuing study of the concepts of the National Accounts and related aggregates; and similar work.

Organization

The Division is divided into two Sections: Business Statistics, and National Income. Each Section is headed by a Chief who reports to the Director of the Division.

The Business Statistics Section is sub-divided into two Units: one Unit covers the field of research and development as it applies to the construction of real output series by means of the direct industry approach; the other Unit is engaged in assembling and processing data from other Bureau Divisions, government departments, and outside organizations for publication in the Section's current reports.

The work of the National Income Section is sub-divided into (a) current work and (b) developmental work. Considered as current work are the annual estimates of the National Accounts, materials prepared for the Budget White Papers, the quarterly estimates of the main National Accounts aggregates (at present prepared on a confidential basis only), the monthly article for the *Canadian Statistical Review*, current deflation work, special estimates prepared for the Dominion-Provincial Taxation Agreements and miscellaneous related work.

Developmental work in the National Income Section may be sub-divided into (a) work directly related to the National Accounts, and (b) work not directly related to the National Accounts. All developmental work directly related to the National Accounts is the joint responsibility of the Chief and a senior officer of the Section who report to the Director. Individuals in the Section who work on developmental projects not directly related to the National Accounts (e.g., income size distribution) report directly to the Director of the Division. The present organizational set-up in this Section is transitional and should lead, eventually, to the creation of a separate development section within the Division.

Co-ordination and Integration of Work Within the Division.—To carry out the Division's work efficiently, and to take advantage of the facilities provided by a centralized Bureau, special working machinery has been established within the Division, aimed at fulfilling two objectives:

1. To provide opportunity for a maximum degree of independent work by individual members of the staff.
2. Since all the work is related, to provide media for continuous co-ordination and purposeful direction of the different projects.

The National Accounts are divided into sectors, with one officer in charge of the economic statistics in one or more of these sectors. Similarly, an officer is in charge of one or more of the other research projects which the Division is called upon to carry out, (e.g., income size distribution). The person in charge of one or several of these projects or sectors is encouraged to become expert in his field; in addition to making the required estimates and devising sources and techniques to improve them, he is encouraged to keep abreast of developments in his field of specialization and to analyse the statistical results in terms of their economic significance.

In addition to specializing in a field of economic statistics, some staff members perform certain overall duties. For example, one specialist in a sector of the Accounts is also responsible for analyzing all the estimates of the Accounts and writing the textual matter for publication. Another staff member who specializes in a specific field of statistics has the additional responsibility of studying the overall conceptual and statistical consistency of the Accounts. Underlying this arrangement is the belief that, in order to carry out work of an overall nature effectively, the officer must be thoroughly familiar with the nature of the problems and pitfalls of at least one field of economic statistics.

Although a certain amount of vertical integration is essential, this has been kept to a minimum in order to develop confidence in staff members to carry out independent research and to take the initiative in assisting other Divisions on problems arising in specialized areas of statistics. Thus, the relationships which have evolved are mainly those of close co-operation among specialists. Wherever necessary, these working relationships cut across the various Units of the Division.

To provide perspective and opportunity for clearing overall problems, staff meetings are held periodically. In addition, an advisory committee composed of the senior members of the Division has

been appointed. This committee has bi-monthly meetings with the Director to consider problems relating to the work of the Division and to examine matters of policy. The agenda for the staff discussions is frequently based on the conclusions reached at these meetings. Staff seminars centering around special problems requiring conceptual clarification are held periodically.

Nature and Number of Staff Employed.— The Research and Development Division has an establishment of 49 positions, about half of which are filled by professional workers (classified as economists or statisticians), most of whom have done postgraduate study in economics, ranging from one to four years.

Of the 32 employees in the National Income Section, 20 are professionals, and 9 perform the necessary clerical duties. The work in this Section is such as to require relatively little clerical assistance.

Of the 20 professional workers, 6 are engaged in projects not directly related to the continuing work of making estimates for the National Accounts. Studies on income size distribution for Canada, exploratory work on input-output, and a study on the import content of Gross National Expenditure require one person each. One person is in charge of the quarterly survey of corporation profits and the development of historical corporation financial statistics; he has the assistance of a statistician. The sixth officer is at present on loan to the OEEC in Paris.

A senior staff member has the responsibility of studying the overall conceptual and statistical consistency of the National Accounts. Most of his time at the moment, however, is spent on further statistical development of the field of consumer expenditure with a view to producing more commodity detail. In this work he has the assistance of an economist. Another economist makes annual and quarterly estimates of consumer expenditure on goods and services on a continuing basis under his immediate supervision.

Several of the professional workers spend most of their time on annual and quarterly estimates in specific fields of the National Accounts, but they are engaged also in developmental work in their respective fields as time permits. Four economists are in charge of the fields of investment income, net income of unincorporated business, investment in inventories, and provincial and municipal revenues and expenditures, respectively. The last-mentioned has the assistance of a technical officer. A statistician makes the estimates for the National Accounts of Federal Government revenues and expenditures under supervision of an economist familiar with the field of federal public finance statistics. Most of the latter's time, however, is taken up with work related to the Dominion-Provincial Taxation Agreements, and with certain other overall duties.

An economist is in charge of assembling, analysing, deseasonalizing and further developing the quarterly estimates of the main aggregates of

the National Accounts. The article on current economic conditions, which appears in the *Canadian Statistical Review*, is written by an economist who, in addition, spends time on problems relating to improvement and development of monthly and quarterly data.

An economist has the responsibility of the field of deflation of the components of Gross National Expenditure. He works under close supervision of the Chief of the Section who is an expert in deflation work and therefore, in addition to the duties indicated in the previous section, retains his special interests in this field.

It should be noted that main duties only have been mentioned and no attempt is made here to give an exhaustive description of all duties performed. For example, the officer in charge of investment income is also responsible for the industrial distribution of national income and acts as liaison with the Labour and Prices Division on estimates of labour income; the officer in charge of corporation financial statistics makes estimates of net and gross rents for the National Accounts; and so on. Further, to avoid disruption of work the principle has been established that more than one officer must be familiar with a particular sector of the Accounts.

The Business Statistics Section employs 4 statisticians and 11 clerks. Three of the statisticians are engaged in research; these and the senior clerks responsible for current work report directly to the Chief of the Section. A statistician does research work on volume estimates for a number of industries other than those covered by the present index of industrial production. He also prepares the text for the Section's reports (other than the *Canadian Statistical Review*) and acts as assistant to the Chief on administration. An economist is engaged in the development of volume estimates in non-industrial sector of the economy. The preparation of annual and monthly volume indexes for the industrial sectors is a continuing project, of which a statistician is in charge. The experience of these workers in the fields of direct measurement of production will be invaluable when the Bureau is in a position to undertake productivity studies. It should be noted that the Section's research work in the area of real output is carried out in close co-operation with the National Income Section. (For a summary of the various duties and positions see organization chart for the Division).

Integration with Work of Other Bureau Divisions and Other Government Departments

Maintenance of appropriate working relationships with the other Bureau Divisions is particularly vital to the Research and Development Division. Much of the information which is processed, rearranged, and consolidated for inclusion in the synthetic aggregates of the National Accounts and the other tables which the Division produces is obtained from these Bureau Divisions. For example, the estimates of personal expenditure on consumer goods and services are based mainly on the statistics produced by

the Industry and Merchandising Division and the Public Finance and Transportation Division; the bulk of the basic data for the annual and monthly volume of production indexes is obtained from the former. Further, several of the National Accounts aggregates are prepared in other Bureau Divisions: the estimates of salaries, wages, and supplementary labour income are prepared in the Labour and Prices Division; the estimates of accrued net farm income of farm operators are derived from figures of net income prepared in the Agriculture Division; the figures on exports and imports included in the National Accounts are the same as those prepared in the Balance of Payments Section of the International Trade Division, with some necessary adjustments to achieve overall consistency in the Accounts; the estimates of capital expenditures on durable assets are prepared in the General Assignments Division. It follows, therefore, that the quality of the National Accounts and of the other synthetic tables produced by the Division is ultimately determined by the quality of the statistics covered by other Bureau Divisions.

In a centralized statistical organization such as the Dominion Bureau of Statistics there can be very close and beneficial contact among the various Divisions. For example, the census files and individual returns are available at all times to the staff of the Research and Development Division, and the easy access to Bureau officials familiar with the operations and background of Canadian industries facilitates their research.

In addition to personal liaison and informal interchange of views, facilitated by a centralized Bureau, however, special machinery had to be established to take full advantage of the benefits made possible by centralization; to ensure systematic liaison between individual workers of the Research and Development Division and others working in the same general field of statistics. The mechanism which has been established in the Research and Development Division for such continuing liaison is the technical panel or small committee. Each panel is built around a specific project. In most cases, the panels or committees are on a continuing basis, but in some cases, if the problems are of a temporary nature only, the panels are appointed on a temporary basis until the problems have been solved. Each panel is made up of one or more representatives of the Research and Development Division specializing in a particular field of statistics, together with representatives of other Divisions interested in the same field. It is understood that no changes in methods, sources, classifications, or concepts relating to a series of mutual interest will be made, either by the Research and Development Division or the other Divisions, without clearance first through the continuing panel. In this manner, the panels constitute a form of mutual assistance and mutual obligation pacts. Copies of minutes of the meetings of panels are sent to the Directors and Chiefs concerned so that necessary control can be exercised. At the same time this machinery provides opportunity for individual researchers to exercise a maximum degree of initia-

tive and to work independently. Among the panels or committees which are in existence at present are: a Census of Industry Committee which investigates means of improvement, accuracy, significance, and timeliness of Census of Industry and other statistics and makes recommendations on its findings; a technical committee on commodity flow and input-output statistics which investigates the feasibility of doing work in these areas of research; a committee to study the consistency of various estimates of per capita food consumption; a panel on labour income, one on farm income, and one on price indexes of relevance to the National Accounts.

These co-operative relationships constitute, of course, a "two-way street". Not only does the work of the Research and Development Division benefit by them, but the quality of the statistics in the other Divisions benefits simultaneously. A few examples will suffice to illustrate this point. It was formerly customary for the Bureau to collect inventories on a plant basis in conformity with other data so collected. However, the significant figure for most economic analysis is not merely the inventories held at the plant, but all inventories of the establishment, including those held in warehouses and at sales offices, wholesale houses, and retail stores of the firm. By amending the questionnaire accordingly a more significant figure was obtained not only for national income purposes but also for use by other consumers of statistics. Similarly the question on salaries and wages was amended to include salaries and wages paid by head offices located outside of plants; in this way a more significant figure was obtained for national income purposes as well as for inter-industry comparisons. Another example is the inclusion of questions on type of organization. While for national income purposes separate information on unincorporated business is required, these questions, by permitting a distribution of all the data derived from the questionnaire by incorporated and unincorporated businesses, make possible more significant analysis for use by individual firms. Thus, while the Research and Development Division is merely one of many users of the statistics compiled by other Bureau Divisions, its special needs, far from conflicting with those of other users, actually supplement them.

Close liaison is also maintained with economic research organizations of other government departments, especially those of the Department of Trade and Commerce and the Bank of Canada. In addition to informal discussions which are frequently held with economists in the other government departments in order to keep abreast of current developments and to become familiar with their thinking and requirements, a number of interdepartmental committees have been established to facilitate co-ordination of the Division's work and to ensure that emphasis is placed on the most urgent projects. These committees meet occasionally only, when problems of sufficient urgency arise. For example, an interdepartmental committee on economic statistics which includes senior economists from other government departments, is called together oc-

casionally to review current work and to ensure that the priority given to different research projects is in line with government needs. An interdepartmental committee on concepts is called together periodically to discuss problems of a conceptual nature. This committee also helps to ensure that the content and presentation of the National Accounts are such as to be of maximum use to the government and other users of the statistics. Several officers of the Division were members of an interdepartmental committee on labour productivity which investigated concepts and methods of measurement in this area of statistical research. An interdepartmental technical committee on estimates of real output, with representation from the Prices Section of the Bureau, has been investigating problems which arise in estimation of real output through the deflation technique, on the one hand, and through using the direct measurement procedures, on the other.

Other Co-operative Arrangements. — In addition to the interdepartmental committees and liaison to facilitate the Division's research and developmental work already discussed, certain additional co-operative arrangements have been established for the purpose of ensuring the smooth flow of data supplied directly to the Division by other departments of the Federal Government and certain private agencies.

The Division uses a great deal of the information tabulated or published by the Department of National Revenue, Taxation Division. In particular, data such as corporation profits, taxes, dividends, and other investment income are based on these tabulations, and continued liaison has been established with officers in the Taxation Division, either on a personal basis, or through a special panel which has been set up for this purpose. Before making any change in their statistics, the officers in the Taxation Division, as a rule, seek the advice of the Research and Development Division, either by bringing up by the proposals at panel meetings, or by consulting individuals in charge of the relevant area in the Research and Development Division. Similar procedures are used when the Research and Development Division wishes to make suggestions relating to taxation data. In addition to data on the corporate sector, research on personal income distribution by size and by regions is greatly facilitated by the availability of information on personal incomes from the Taxation Division.

Liaison on a personal basis is also maintained with the Federal Department of Insurance which tabulates statistics on life and fire insurance companies, trust and loan companies, and small loan companies. Liaison has also been established, both on a panel and personal basis, with the Research Department of the Bank of Canada; this organization also provides the Division with certain data required for its estimates. The Department of Labour compiles a special statement of time lost in labour disputes for the Business Statistics Section. The Canadian Bankers' Association supplies the basic data incorporated in the report on Cheques Cashed. By mutual agreement the Association

consults the Business Statistics Section whenever a change in coverage is contemplated, so as to ensure continuity in the series. Other organizations which send data to the Section for publication purposes include the Canadian Life Insurance Officers' Association and the Toronto and Montreal stock exchanges. All these organizations have always co-operated fully with the Bureau in discussing and adopting, where possible, suggestions for improvements, and have often contributed useful advice on problems peculiar to their statistics.

Whenever the Research and Development Division requires special statistics from Provincial or Municipal Governments, or private agencies, which have established contact with other Bureau Divisions, it is the policy to get this information through other Bureau Divisions, rather than directly. For example, the Canadian Pulp and Paper and Newsprint Associations provide the Business Statistics Section, through the Forestry Section of the Bureau, with monthly production data on newsprint, pulp, and various grades of building and fine papers. Similarly, through the Manufactures Section of the Bureau, monthly production and shipments data on cotton, wool, and artificial silk are obtained from the Primary Textiles Institute. Through the Public Finance and Transportation Division, the National Income Section is supplied with estimates of quarterly provincial revenues and expenditures for incorporation in the National Accounts. At the present time eight of the ten provinces are providing this information on a continuing basis.

Collection of Basic Data, Follow-up, Editing, Checking, and Processing

As already stated, the Research and Development Division is mainly dependent on other Divisions of the Bureau for its statistical raw material. Direct collection of statistical information by questionnaire and its tabulation is a relatively small part of its work and is limited to certain special cases. These include (a) surveys of professional incomes, (b) surveys of family and individual incomes, and (c) surveys of quarterly corporation profits.

For the surveys of professional and personal incomes, the field work is done by the regional staffs of the Special Surveys Division. Before the questionnaires are designed or processing of data set up, the purpose and scope of the survey are discussed with representatives of the Mechanical Tabulation Division to ensure most efficient design of forms and tabulations. Usually a preliminary list of calculations likely to be needed is drawn up and, with this in mind, forms and processing are planned with the advice of the Tabulation Unit. Draft questionnaires are also discussed with representatives of the Special Surveys and other Bureau Divisions and outside government agencies interested in the general areas of statistics covered by the survey.

The quarterly survey of corporation profits was established by the Research and Development Division but major parts of the survey have been

transferred to the General Assignments Division which is assuming complete responsibility for it as the developmental stages are completed. The Research and Development Division will continue to take an active part in the survey until after the first report on the results is published. Thereafter it will participate in an advisory capacity only. The questionnaire for the survey was drafted by a special interdepartmental panel with representatives from the Bank of Canada, Departments of Finance and National Revenue, and the Division. Further, the advice of a number of businessmen and associations was obtained before the survey was launched.

Surveys of Professional Incomes.— Surveys of incomes in several professions (medical, dental, and legal) have been made primarily to secure accurate estimates of net earnings for use in the National Accounts, although they have, in addition, provided data on average earnings in relation to factors such as age, place of residence, and so on. The method employed has been similar for all three surveys. Lists of practising members were available from sources such as professional associations. Questionnaires were mailed to all names on these lists. A letter was enclosed with each questionnaire explaining the purpose and importance of the survey. Follow-up letters went out to non-respondents but not to those who had sent back refusals. To conclude the surveys, samples of non-respondents were selected and contacted—by mail in rural areas, and by enumerators in urban centers. In two surveys, satisfactory samples were obtained by this method so that the estimates could be made for all non-respondents. In the third case, however, the sample of non-respondents was not satisfactory and could not be used. On the whole, response on all three surveys was very good. An important contributing factor to the success of the surveys was the endorsement of the professional association concerned.

Surveys of Family and Individual Incomes.— An example of this type of survey is the recent pilot survey of family and individual incomes carried out in March, 1952. This survey was intended as a test to see whether annual income surveys in Canada are feasible.

The survey covered that portion of the labour force sample which was being rotated out in March. A control schedule was used for each household containing information on age, sex, occupation, and so on of all household members. In addition, each individual receiving an income was asked to fill out a supplementary schedule on incomes.

The survey was carried out by the field staff of the Special Surveys Division. A letter from the Dominion Statistician stressing the importance of the survey was left with each household along with income schedules. The enumerator called back a week or so later to pick up the completed forms. Even if no income data were given, the control information on the household was collected by the enumerator. This will permit some analysis of non-respondents. After field interviews were completed,

letters were sent to non-respondents giving them the opportunity to mail the forms. The response to this request was good.

The survey referred to the calendar year 1951. It was conducted in the spring because that is the time when income tax forms are usually completed.

Quarterly Survey of Corporation Profits.— The purpose of the survey is to permit estimation of national income on a quarterly basis, the basic data being obtained entirely by questionnaire. The questionnaire is mailed about three weeks after the end of the quarter to which it refers.

This survey, like those already mentioned, is carried out entirely on a voluntary basis. In order to obtain the co-operation of respondents, the first letter which accompanied the questionnaire was carefully drafted to convey the purpose of the study and its great usefulness to business and government. This undoubtedly contributed to the favorable response rate. About 60 per cent of the larger companies responded favourably; the response rate was much poorer for the smaller companies many of which do not keep books on a quarterly basis and thus do not have the information requested. The larger non-responding companies are being interviewed by members of the Bureau staff to persuade them to join the survey. It is hoped to raise the response rate for the larger companies considerably by this method. The smaller companies will not be interviewed, but additional companies will be chosen to replace the non-respondents in this group.

Other aspects of this survey are discussed in the chapter on the General Assignments Division, which is assuming responsibility for this survey.

With reference to methods of follow-up, once a company is in the sample it is sent questionnaires about three weeks after the end of the quarter. Other follow-up notices are sent about five weeks after the end of the quarter and again two weeks later if necessary.

At the cut-off date blow-up factors are computed and totals by industry and size groups are obtained. The figures are then carefully analyzed and adjustments made where necessary. Although to date this work has not been carried out on a rigid time schedule, in future, the intention is to have the final results within two weeks after the cut-off date, i. e., two and a half months after the end of the quarter to which the returns refer.

Other Aspects of Checking and Processing.— The liaison machinery outlined above is an important factor in reducing errors which could arise through misunderstanding or inconsistent treatment of items in different sectors of the Accounts. In addition, however, internal checking controls have been set up.

Calculations of the National Accounts are made twice wherever feasible; once by the person making the estimates and again by another officer. In addition, the officer responsible for a sector checks his results in the light of related data and reason-

ableness. The figures are then handed to the person in charge of assembling all the estimates of the various sectors. After posting them on a master sheet he approaches the individuals concerned to audit the figures they are responsible for and to initial the totals. In addition, a tabulation is made of all data which a person in one sector provides for another sector and a careful audit is made of these "to" and "from" statements.

In all cases where revisions have been made, the differences between the old estimates and the new estimates are copied on a separate worksheet, and the individuals concerned must be prepared to provide explanations of the changes at a meeting which is held subsequently. At this meeting, other problems, e.g., reasons for rates of change between consecutive years, are discussed. Where necessary, graphs are used to bring out important movements.

In preparation for this meeting the assembled aggregates are carefully studied for consistency on the basis of internal ratios, related data, and general economic development, by several senior members of the National Income Section. The meetings are attended by all research workers involved in the estimates.

The final results, together with an analysis and appropriate comment, are then studied by the Director and the Chief of the National Income Section and further investigation and checking are made until the results are acceptable. Although clerical assistance is utilized to a maximum in the various arithmetic procedures, experience has shown that professional people who are aware of the significance and relationships of the various aggregates in the Accounts and who can make mental analytical checks of the results must be involved in the checking procedures even at the stage of proof-reading of copies.

Similarly, the data published in the *Canadian Statistical Review* and the reports of the Business Statistics Section, undergo a thorough examination and check before they are released. In the case of the *Canadian Statistical Review* this is done by two senior clerks in the Business Statistics Section working independently. Special care is taken that the figures agree with those published in the more detailed individual reports of the various Divisions. Experience has shown that one especially effective technique is to run a cumulative total of the monthly data to compare with that of the Bureau Sections which supply the figures. In this manner revisions of previously released data that may have been missed in recording the new figures are detected. Reading of proof for the *Statistical Review* is done in pairs, one clerk reading to the other, the tabular matter for the English and the French editions being handled simultaneously. Before finally sending the proof back to the printer for correction, all the tables are given a final inspection as an additional precaution against discrepancies in the tables, headings, or notes. Similar checking procedures are employed with respect to the indexes of industrial production.

Statistical Gaps, Appraisal of Quality, and Program for Improvement

A statistical gap may be said to exist where there is demand for information which is not available, or where the quality of available data is deficient considering the purposes for which they are required.

In recent years, the rapidly shifting and complex economic scene has brought forward new demands for statistics of the highest quality, and in new areas, by business and other groups in the economy. The increased participation of governments in national affairs brings forward demands for statistical guideposts, not only to cope with short-run emergency situations, but to permit analysis of the impact of important economic decisions on the long-run development of the country. Further, the activities of international bodies have created demands for statistics which fulfil certain specifications and permit international comparisons. All these dynamic elements have created additional gaps in the statistical system, and the ingenuity of the statistician is taxed to fill, as quickly as possible, the most urgent and important needs and demands.

In Canada, we were fortunate in having had a well developed statistical system long before the National Accounts were set up. The work on the National Accounts, however, required the development of additional statistical series and the qualitative improvement of available data. A considerable amount of this work has been completed with respect to the basic series making up the main tabular framework of the Accounts; for appraisal of the reliability of the various estimates and detailed description of their content, the reader is referred to Part II of the publication *National Accounts Income and Expenditure, 1926-1950*.

For the Accounts as a whole, one indication of reliability is to be found in the size of the statistical discrepancy between the Gross National Product and Gross National Expenditure, before adjustment for "residual error of estimate". These two main aggregates are conceptually equal, but are based on substantially independent estimates. Hence, close balance between the two totals, though not an absolute guarantee of absence of error because of the possibility of compensating errors, provides strong grounds for confidence. An examination of the discrepancies in each year since 1926 shows the following results:

1. The average discrepancy in the historical series back to 1926 is quite small relative to the totals, even when allowance is made for some interdependence of the two estimates.
2. Although observed discrepancies are negative in some years and positive in others, the Gross National Expenditure (unadjusted) tends to exceed the Gross National Product (unadjusted). This bias is probably the result of the peculiarities in the nature of the information used such

that incomes tend to be somewhat understated and/or expenditures tend to be somewhat overstated.

Although the overall discrepancy in the main aggregates appears to be minor, the accuracy of the several components of gross national product and gross national expenditure varies considerably. At one extreme are highly accurate components such as "corporation profits" and "manufacturing salaries and wages" which are based on practically complete coverage. At the other extreme are items such as "net income of unincorporated construction contractors" which are based on very inadequate information and in some cases are no more than informed guesses. (see *National Accounts Income and Expenditure, 1926-1950, Part II*).

As previously noted, considerable progress has been made in recent years in improving the accuracy of the weaker component estimates and the program for further strengthening the statistical basis of important components is being implemented as quickly as available resources and competitive projects in the developmental program permit.

Preliminary estimates are subject to a much greater degree of error than final estimates, since the more accurate series used in the final calculations are subject to time delays ranging from one to two years; and the development of monthly and quarterly series to facilitate the early preparation of reliable annual estimates and continuing publication of monthly and quarterly data has been an active phase of the Division's work in the past two years. In particular, a program is underway which will culminate in the near future in the continuing publication of quarterly estimates for the main tables of the National Accounts. Actually, quarterly estimates of the main aggregates are currently being prepared by the National Income Section but the results are distributed on a confidential basis only to a number of senior government officials. Regular publication must await the filling of a number of gaps in the basic statistics. The most important of these gaps, namely, quarterly estimates of corporation profits and of provincial government revenues and expenditures, are at present being filled. Another gap in this field, i.e., quarterly estimates of farm net income and particularly quarterly changes in farm inventories, has been the subject of special studies which are clearing the way for regular estimation of this component. While the quarterlies have been de-seasonalized, considerable work remains to be done to ensure that the seasonal patterns used are realistic and that they are promptly changed with changes in seasonality. Work is also proceeding on expressing quarterly totals in terms of constant dollars to arrive at an approximation to volume movements. As indicated above, the work on the quarterlies is part of the larger program to extend the currency of available information which, it is hoped, will eventually result in publication of monthly estimates of personal income and of consumer expenditure on goods and services.

There is considerable demand for certain balance sheet items to accompany the present current transactions embodied in the National Accounts. In particular there is a demand for direct estimates of personal savings, so as to obtain a picture of the forms which they take (e.g., changes in bank deposits, changes in indebtedness, changes in equity ownership, savings via life insurance companies, and so on), and to provide a check of the savings estimates included in the National Accounts which are obtained residually by subtracting personal expenditure on goods and services from personal disposable income. The Research Department of the Bank of Canada has done considerable work in this area, and is being assisted by the Bureau's Research and Development Division.

Although personal expenditure on consumer goods and services has been published in some detail there is a considerable demand for more commodity detail. Accordingly, a program has been initiated recently to provide as much commodity detail of personal expenditure as available statistics permit. The project begins with commodity output at primary stages and attempts to trace these commodities through to final consumption, adding mark-ups at each stage and making other adjustments so that the final total of commodities will provide an independent, or so called direct, estimate of consumer expenditure on goods. When the 1951 Census of Merchandising and Services is completed it will also be possible to improve some of the consumer service components and to publish them in greater detail.

Another important gap in the Canadian statistical system which is in process of being filled at the present time is in the field of income size distributions. A study of the distribution by size of individual and family incomes in Canada in 1948 is nearly complete. This study is based upon special tabulations from income tax statistics and from data collected in a family expenditure survey conducted in 1948.

As indicated above, a test survey of incomes was recently carried out on behalf of the Research and Development Division by the field staff of the Special Surveys Division. However, it is too early to assess the quality of the figures obtained until processing of the data is completed and checks, such as comparisons with National Income aggregates and taxation statistics, are made. Assuming that the figures are acceptable they will be used in conjunction with income tax statistics to produce a synthetic distribution of income by size for 1951.

To bring the work of income size distribution on a continuing and adequate basis a number of problems will have to be solved such as: should the series be computed at regular intervals; what is the most useful definition of the family unit in the light of the various uses to which the data may be put; what are the best ways of minimizing under-reporting of certain kinds of incomes, particularly investment income; what procedures will result in better coverage of farm families; and a number of additional problems.

Another field of great immediate interest, and one in which considerable development has already taken place is that of estimates of total real output. The Division has published estimates of the total and main components of Gross National Expenditure in constant dollars back to 1926. This deflation project utilized wholesale, retail, and export and import price indexes. However, certain other price indexes were and still are required in a number of sectors, especially in the field of capital investment goods. Price indexes for such items as machinery and equipment are notoriously lacking and difficult to obtain; provisional series have been developed by relating changes in material and labour costs to input weights, assuming constant productivity and margins, but the estimates will be rendered firmer when prices of the finished commodities become available. The deflation of inventories, which at the present time is performed by customary deflation procedures, will benefit substantially when it is possible to obtain separate price and quantity data directly from manufacturers, retailers and other holders. Deflation of the service components in the current balance of international payments lacks price indexes for items such as freight and shipping. Studies are being made to determine the most practical methods of obtaining data in this whole area. (For further comment on the nature and quality of the statistical content of the Division's constant dollar estimates, see *National Accounts Income and Expenditure 1926-1950*, Part 11, Section 6).

In connection with the index of industrial production, published by the Business Statistics Section, the main deficiency is lack of physical volume data, especially in the monthly series. The mining and public utilities sectors of current monthly indexes are satisfactorily covered by physical volume data, but a considerable number of industries in manufacturing are measured by man-hours. While man-hours give a rough indication of volume of output over relatively short periods of time, they do not always reflect true production; they include hours paid for but not necessarily worked, relate only to the last pay period of each month, reflect work-time devoted to the tooling-up or developmental stages of new production schedules, and, of course, are unadjusted for productivity changes. The obvious solution is the collection of more physical volume data on a monthly basis. Reasonable progress in this connection has been made in recent years, and several industries previously represented by man-hours can now be measured with physical output data.

There are some industries the heterogeneous products of which are not available in quantitative form, e.g., machinery, furniture, and automobile parts. This problem occurs in the computation of annual indexes from census data, as well as in the monthly series. As regards annual series the problem can be solved either by adjusting value of production for price changes, or by applying productivity factors to man-hour data. In the former case the difficulty is in obtaining adequate price data to deflate the

more complex products; generally, emphasis in wholesale price indexes has been placed on raw materials, semi-finished commodities, and consumers' non-durable commodities; as already noted seldom are data on price movements of consumers' durables and capital goods available at the manufacturing level and these are the industries which are most difficult to measure in physical volume terms. As noted above, efforts are being made at present by the Labour and Prices Division to extend the coverage of the Bureau's price series to some of these highly fabricated goods.

The problem of adjusting man-hours for productivity changes is rather difficult; accurate physical volume data are essential in the construction of productivity ratios, and it is the lack of these data that necessitated relying on adjusted man-hours in the first place. An alternative is to assume that productivity changes in the industries for which data are not available are the same as those in allied industries whose products are easier to measure in terms of physical volume. Until more research can be done in the field of productivity statistics in Canada it is not possible to verify the validity of this assumption. In the meantime, unadjusted man-hours are used in the monthly indexes but as these cover a relatively short period of time serious discrepancies are not likely to develop. In the construction of annual indexes from census results the problem is less serious; quantum data are available for a much larger proportion of industries; also, for those industries where the use of man-hours is mandatory, auxiliary information is often at hand with which to check the man-hour indicators.

The work of direct measurement of the volume of physical output is being extended to cover the entire economy, including the extractive industries, construction, services, trade, transportation, communication and storage, and finance, insurance, and real estate. It is too early to appraise the quality of this work. When completed it will provide information on the relative contribution of different industrial groups to real output, and a check of the movements obtained by deflating gross national expenditure.

Exploratory work has been initiated in the field of input-output. The sole objective of this work in the Bureau at the present time is statistical development. It may be that, in time, some of the statistical results of this work can be usefully applied for purposes of linear programming, model building and forecasting, but for the time being at least, any such eventual application is regarded as incidental. The terms of reference of the work on input-output is outlined below but it may be noted first that a related project, that of allocation of imports to main categories of gross national expenditure, has been provisionally completed for one year. The main object of this study was to determine what part of the various final expenditures finds its way into domestic production, employment, and incomes as opposed to that part which finds its way abroad, and thus become in technical jargon a "leakage".

It has been emphasized during discussions at the Bureau on input-output work so far that the input-output idea could be used in a centralized bureau as a powerful unifying instrument for the following purposes:

1. As a device for overall management and development of economic statistics. An input-output scheme should assist in determining whether decisions by the Census of Industry Committee (for example) are being uniformly implemented in different Sections; it could result in improved questionnaires. In a word the input-output scheme should facilitate further the tracing of inconsistencies, gaps, and duplications, which may still exist in the Bureau's output of economic statistics. In such tracing of inconsistencies, etc., the basis of reference would of course be the Division's continuing research projects such as detail of consumer expenditure, direct measurement of output, and so on. One of the major results of the study will be additional information pertaining to the classification of commodities. The emphasis in this study will be comparability in the treatment of commodities on different industry schedules and in external trade statistics.
2. As an educational forum. The input-output scheme can be used to reveal to individual workers how their specialized statistics fit into an overall scheme in which the different parts are interrelated. Work in separate fields can be done more intelligently if the statistician has an idea of how his particular field of statistics is related to the overall statistical system. The input-output scheme provides an insight into how specialized work of various Sections of the Bureau fits into the overall statistical picture.

Uses of Various Statistical Series

National Accounts

For Canada and many other countries, one of the most important advances in the field of applied economic statistics in recent years has been the development of an interrelated system of National Accounts which measures and portrays the operations of the economic system. Equally important has been the swift growth in the recognition of these Accounts as an essential background for analysing problems of public policy and those of a business nature. More and more, businessmen, labour leaders, economists, members of the government and others are looking at economic problems in quantitative terms.

Specific applications of the National Accounts in Canada may be summarized under six main headings:

1. Use for Government Policy Formulation.
2. Administrative Uses by Government.
3. Use by Business and Labour Organizations.
4. Educational Uses.
5. Research Uses.
6. Use in Statistical Collection.

1. Government Policy Formulation.—In the field of government policy formulation, the National Accounts have gained a wide application in Canada, both as basic background material and as a framework within which specific proposals can be rigorously examined.

The Federal Department of Finance makes wide use of the National Accounts data in the preparation of the annual Budget. In Canada the Budget address is customarily drawn up as a report to the nation on the general economic situation, in addition to being a statement of proposals for new fiscal legislation. The National Accounts provide much of the background of the general economic report. Each year for the past five years, a White Paper containing the detail of the National Accounts, together with an analysis of the data, has been tabled in the House of Commons as an Appendix to the Budget speech. This general economic review is the official government pronouncement on the state of the economy, and forms an essential introduction to the Government's budgetary proposals.

In framing the specific budgetary proposals, the National Accounts play an important role. For example, in Canada, practically all federal tax revenues are collected as a percentage of incomes, imports, or sales. The estimates of tax revenues for each new fiscal year must, therefore, be based on the forecast levels of these strategic aggregates. For this purpose, the National Accounts provide the basic framework¹.

In drawing up the Budget proposals in the spring of 1951, the Government faced the problem of incorporating a defence program into an already fully expanded economy. In order to free resources for defence purposes, new and higher taxes were levied on consumers' durable goods, and a deferred depreciation provision was incorporated into the income tax laws to discourage non-essential capital investment. There can be little doubt that these policies were thought out within the framework of the National Accounts, as witness the statement of the Minister of Finance: "Unless there is a much sharper increase in per capita output than we have ever had in the past, it will be literally impossible for all groups in the country to accomplish what they want or what they are planning to do: the government to double its defence expenditure, consumers to raise their levels of consumption, and business to increase its rate of capital expansion. We cannot allow the defence programme to suffer, nor would we wish to see a reduction in the levels of ordinary personal consumption. It is therefore largely in the field of capital in-

1. "My forecasting and my fiscal programme for 1950-51 are based on the expectations of sustained high levels of production and employment, and can be summed up quickly in an estimate that the gross national product, which is in effect the economic tax base, will be 1 per cent or 2 per cent higher in 1950 than in 1949". (Budget Speech, March 28, 1950). "I am basing my Budget on an expected gross national product that will closely approach \$22½ billion. (Budget Speech, April 8, 1952).

vestment and consumer durables that room will have to be made for the defence programme".¹ In a recent speech the Minister of Finance said "..... many of us now take for granted an analysis of our economic situation in terms of national income and expenditure, saving, investment and budgetary policy".

Each year in its annual report the Bank of Canada publishes a survey of economic conditions in which the National Accounts are a prominent feature.

The Economics Division of the Department of Trade and Commerce relies heavily upon the National Accounts in making its economic forecast at the beginning of each year. These forecasts are developed within the same statistical and conceptual framework as the National Accounts, and in some cases are projections of National Accounts aggregates into the future. Considerable attention is also being given to the use of econometric models in the forecasting work of the Department of Trade and Commerce. The functions used in such models are derived to a considerable extent from National Accounts data.

Officials of the Department of Labour are interested in the National Accounts from the standpoint of employment and wage levels. They are used by the Department of National Health and Welfare in studying the implications of various social security proposals. The Department of Agriculture makes constant reference to these data in assessing the demand for farm products and in viewing the position of agriculture in the context of the overall economic situation. The industrial distribution of the National Income has been used in the work of the Industry Studies Section of the Department of Trade and Commerce, and the provincial distribution of Personal Income has provided data for the Area Studies Section.

2. Administrative Uses by Government. — An important administrative use of the National Accounts in Canada has been their adoption by the Federal and Provincial Governments as the basis for adjusting the federal tax rental payments to the provinces. In 1947, the Federal Government entered into an agreement with the provinces (Ontario and Quebec excepted) whereby it gained exclusive jurisdiction over the fields of personal income taxes, corporation taxes, and succession duties. On its part, the Federal Government agreed to pay each of the provinces a minimum sum of money which was to be adjusted each year in accordance with changes in gross national product per capita and movements in provincial populations. On the basis of this formula, payments amounting to approximately 500 million dollars have been made to the provinces during the past five years.

A further administrative use of the Accounts is in connection with Canada's contribution to inter-

national organizations. The National Income, adjusted for certain factors, provides a standard for assessing national contributions.

3. Uses by Business and Labour Organizations. — The number of requests received by the Bureau from large corporations, financial houses, trade associations, and labour groups testifies to the growing use that is being made of the National Accounts in the Canadian business world. In the same way that the Accounts provide a guide to the operations of the Canadian Government, they are used by business men in studying economic trends and analyzing business problems. With a set of accounts to guide him, the executive is able to visualize more clearly the complex processes which take place in the economy, and to form judgments. His judgments concerning the future are more soundly based when viewed against the record of the past and inter-relationships of the present. In recognition of this, many of the larger organizations have now established research and statistics sections, whose purpose it is to assemble and study the facts upon which business decisions can be based.

It is difficult to proceed beyond generalizations when considering the uses which are made of the Accounts by business and related organizations. Many problems faced by industry are unique to the industry or firm. However, the potential usefulness of the data for many specific purposes such as the study of markets, the relationship of firms to industry, the relative importance of particular industries or commodities in the economy as a whole, regional variations in incomes, and so on is generally recognized. The wide and diversified assortment of business organizations whose representatives have come to the Division for interviews and who have written the Bureau requesting the National Accounts publications suggests that they are used for many such specific purposes, in addition to their use as background material for studying the general state of the economy. Among the interested organizations are some of the larger corporations engaged in the manufacture of textiles, automobiles, base metals, electrical equipment, chemicals, films, batteries, petroleum products, and steel; companies engaged in telephone communication and air transport; mail order houses; import and export firms; banking; brokerage and insurance companies; chambers of commerce and trade associations; research firms and foundations; newspapers; and labour and farm organizations.

4. Educational Uses. — At the more popular level, the National Accounts have served a most useful purpose as the basis for educating the general public on economic matters. They provide a framework within which economic questions of public concern can be considered in their quantitative aspects. As already pointed out, the habit of looking at economic problems in quantitative terms and in relation to overall economic magnitudes has become more general. The National Accounts have played a very important part in this development.

¹. House of Commons Debates Tuesday, April 10, 1951, Page 1802.

At the formal level, the educational value of the National Accounts needs little comment. Universities make wide use of the Accounts, both in their teaching programs and in carrying out their research functions. National Income analysis has become the unifying theme of modern economic theory, and the empirical system represented by the National Accounts provides a highly effective teaching device.

5. Research Uses.—All of the groups discussed above—government, business, labour organizations, and the universities—have made use of the Accounts in various research projects. The behaviour of the economic magnitudes over time reveals significant information about how the economy functions. Moreover, when studied in conjunction with other data, significant correlations may be discovered which provide additional insights into the operation of the economy. Such information, drawn from the historical record, provides valuable background material to governments in framing policies designed to maintain income and employment at high, stable levels. As already noted, it is equally useful to workers in the fields of business, labour, and university research.

6. Statistical Collection.—The National Accounts are a guide to setting up priorities in certain fields of statistical collection. At the present time, the Division is working on the development of direct estimates of production, a study of inter-industry relationships, direct estimates of savings, income size distribution, and quarterly estimates of the National Accounts. Each of these projects represents, in effect, a further extension of the basic national accounting framework.

Moreover, the Accounts facilitate maintenance of consistency in statistical collection. Not only are they internally consistent in themselves, but, since they are the "keystone of the statistical

arch", further extensions of the statistical system are more efficiently considered in terms of consistency with them.

Other Economic Series Developed by the Division

Some of the uses referred to above are also applicable, though to a more limited extent, to the other series produced by the Division and these will receive briefer comment here.

The Index of Industrial Production, since it reflects month-to-month fluctuations in the physical volume of industrial output is of especial interest to businessmen and students of current economic trends. Federal Government departments find it useful in evaluating current levels of business activity. Since separate indexes are published for major industries more detailed analysis of economic developments is made possible.

Cheques Cashed in Clearing Centres are the only banking series published in Canada on a regional basis. It serves to suggest to businessmen and others current changes in relative activity of individual cities or areas. The series must, of course, be used in conjunction with other data.

The Survey of Production reveals trends of the value of commodity production by regions and separately for major industrial groups. It is used as a supplement to the National Accounts.

The Canadian Statistical Review serves as a compendium of current statistics. The lead article of the Review summarizes current economic conditions on the basis of the current statistics it contains and other data. The article also serves as an instrument for further developing and improving current economic series; the experience obtained from actual application of the current data, by members of the Division, serves to suggest to them the lines along which further development can most usefully take place.

DOMINION BUREAU OF STATISTICS
RESEARCH AND DEVELOPMENT DIVISION

Chart showing function
and organization

DOMINION BUREAU OF STATISTICS

RESEARCH AND DEVELOPMENT DIVISION

Assembles and analyses the Bureau's output of current economic statistics, and relates the series within an overall national accounting framework to provide an integrated picture of the nation's economic activity. In addition, it carries out developmental work designed to provide new and improved statistical information. The staff of the Division numbers 49.

Director, S.A. Goldberg, Economist Grade 9
1 Stenographer Grade 3

BUSINESS STATISTICS SECTION

The Section is responsible for research and development work on real geographical output by means of the direct industry approach, including the conception and publication, on a current basis, of monthly and annual indexes of industrial production.

Chief, V.R. Berlinguette, Statistician Grade 5

NATIONAL INCOME SECTION

The Section is responsible for current work on the annual and quarterly estimates of the National Accounts and other related projects as indicated below.

Chief, P. H. Lacey, Economist Grade 7
1 Stenographer Grade 2B

REAL GEOGRAPHICAL OUTPUT

NON-INDUSTRIAL SECTORS

- Construction of historical series of volume indexes for industrial industries from data originating in the Census of Industry and other sources, and development of methods and data to improve the quality of available indexes.

- Development of current indexes on the basis of available data for use in conjunction with current declared Gross National Expenditure.

- Assistance to Chief on administration and the writing of text for reports of the Section.

Staff - 3
1 Statistician Grade 3
1 Statistician Grade 2
1 Clerk Grade 4

INDUSTRIAL SECTORS

- Construction of final annual indexes of the volume of "net" output for all manufacturing, mining and electricity and gas industries from data originating in the Industry and Merchandise and other figures.

- Preparation and publication of the monthly index of industrial production, adjustment of current monthly indexes to revised annual levels.

- Preparation of annual report "Survey of Production".

- Preparation, periodically, of special statements available.

Staff - 4
1 Statistician Grade 2
1 Clerk Grade 4
2 Clerks Grade 3

COMMODITY FLOW STUDIES

- Allocation of imports to the various expenditure components of Gross National Expenditure, and similar studies.
- Participation in the development of a standard commodity classification suitable for coding export, import, and Census of Industry data on a comparable basis.

Staff - 1
1 Economist Grade 5

CORPORATION AND OTHER PRIMARY FINANCIAL STATISTICS

- Development of continuing quarterly series of corporation profits and related financial data.
- Development of historical series of corporation financial statistics back to 1925.
- To advise and assist on problems related to development of new statistical series.

Staff - 4
1 Economist Grade 4
1 Statistician Grade 1
1 Clerk Grade 4
1 Clerk Grade 3

GEOGRAPHICAL AND SIZE DISTRIBUTIONS OF PERSONAL INCOME

- Development of a size distribution of individual and family incomes on a continuing basis.
- Estimation of geographical distribution of personal income and its components.

Staff - 1
1 Economist Grade 2

DEVELOPMENTAL AND CURRENT WORK ON THE NATIONAL ACCOUNTS AND RELATED PROJECTS

- Development of additional detail of consumer expenditure by tracing output of commodities from primary to final stages.
- Preparations concerning basis of national and quarterly estimates of consumer expenditure and depreciation and assembly of estimates on transactions with non-residents and gross domestic investment (excluding inventories).
- Study of the Accounts for overall conceptual and statistical consistency.
- Further development of National Accounting framework and improvement in reliability of estimates.

Staff - 3
1 Economist Grade 6
2 Economists Grade 1

CONTINUING WORK ON NATIONAL ACCOUNTS AND IMPROVEMENT IN ASSIGNED SECTORS

- Development Income and Industrial Distribution (i) Preparation on a continuing basis of annual and quarterly estimates of investment income including corporation profits, dividends, interest and rents. (ii) Preparation of the industrial distribution of the National Income. (iii) Further development of related data.
- Net Income of Unincorporated Business (i) Annual and quarterly estimates of net income of various types of unincorporated business. (ii) Further development of related data.
- Provincial and Municipal Government Revenue and Expenditure for the National Accounts (i) Annual and quarterly estimates of provincial and municipal direct and indirect taxes, interest income, employer and employee contributions to social insurance and government pensions, government expenditure on goods and services, transfer payments and subsidies. (ii) Further development of related data.
- Investment (i) Annual and quarterly estimates of the net change in inventories of private and government business enterprises. (ii) Definition of the figures. (iii) Estimation of the valuation adjustment for inventory gains or losses. (iv) Further development of related data.

Staff - 7
4 Economists Grade 3
1 Technical Officer Grade 2
1 Clerk Grade 3
1 Clerk Grade 2A

QUARTERLY NATIONAL ACCOUNTS ESTIMATES

Assembly of quarterly estimates prepared in the various sectors, despatching the data, and analysis of the results. Further study of the conceptual and methodological problems to improve the overall consistency and accuracy of the results, and to prepare them for eventual publication.

Staff - 1
1 Economist Grade 2

CURRENT PUBLICATIONS

- "Canadian Statistical Review": French and English editions. Development and maintenance of indexes containing all basic data collected from other Divisions of the Bureau and outside agencies, compilation, processing and verification of data, preparation of printers' copy and proof reading.
- "Cheques Cashed in Clearing Houses" and "Commercial Failure": compilation and processing of data and preparation for publication on a monthly, quarterly, or annual basis.

Staff - 5
2 Clerks Grade 4
2 Clerks Grade 3
1 Clerk Grade 3A

CLERICAL POOL

Staff - 2
1 Clerk Grade 2B
1 Clerk Grade 2A

INTER-INDUSTRY RELATIONS

Exploratory investigation of (a) material available for the study of inter-industry relations, and (b) feasibility of using the input-output system for the purpose of statistical development and co-ordination.

Staff - 1
1 Economist Grade 4

SPECIAL REPORTS

Preparation of periodical reports on international developments in the field of research in income and wealth and special reports.

Staff - 1
1 Statistician Grade 3 (At present on loan to OEEC)

ARTICLE ON CURRENT ECONOMIC CONDITIONS AND DEVELOPMENT OF CURRENT SERIES

Preparation of monthly article on current economic conditions for publication in the Canadian Statistical Review. The article also serves as an instrument for studying and improving the Bureau's output of monthly and quarterly data.

Staff - 1
1 Economist Grade 3

DEFLATION

Definition of the annual and quarterly estimates of Gross National Expenditure for the purpose of measuring movements in the volume of real output, and for the improvement in basic data and procedures.

Staff - 1
1 Economist Grade 2

CLERICAL AND STENOGRAPHIC POOL

Staff - 7
1 Clerk Grade 4
1 Clerk Grade 3
2 Clerks Grade 2B
1 Clerk Grade 2A

Number, Periodicity and Nature of Reports

Report	Number	Periodicity	Contents
National Income Section:			
National Accounts, Income and Expenditure, 1926-1950	1	Published 1952	This basic report consolidates the research of the past five years in the field of Canada's National Accounts and supersedes all previous publications on National Accounts issued by the Bureau. The report is divided into two parts, preceded by an introduction which analyses the main highlights of the statistical results. Part I presents the tabular information, and it contains a number of new features, of which the constant dollar series is the most important. Other new features include extension back to 1926 of the income and expenditure accounts for the various sectors of the economy, the industrial distribution of the National Income and main components, the detail of personal expenditure on consumer goods and services, and the analysis of corporation profits; a new classification of personal expenditure on consumer goods and services; a table showing the relation of National Income and Personal Disposable Income; a table showing the "imputed" content of personal expenditure; and some changes in tabular presentation. Part II reviews the statistical sources on which the Accounts draw, and procedures used in making the required estimates. This discussion aims primarily to give the users of the data a general view of the content of the various aggregates and background for appraising the reliability of the estimates. In order to provide perspective, the discussion on sources and methods is preceded by a summary of the conceptual framework which underlies the Accounts.
National Accounts, Income and Expenditure, Preliminary	1	Annual	The main tables of Gross National Product and Expenditure and Personal Income and Expenditure have been published each year within six weeks of the end of the previous year. Figures are based on 10 or 11 months' data.
National Accounts, Income and Expenditure, Revised Preliminary	1	Annual	The National Accounts report published in April contains the most-up-to-date revisions and more detailed tables: in addition to the overall tables of Gross National Product and Gross National Expenditure it includes separate accounts of income and expenditure, with appropriate subdivisions, for the four main groupings in the economy; persons, businesses, governments, and non-residents. The main transactions between these four groupings can be traced separately in the accounting system now published by the Division; a table showing the sources and disposition of the nation's savings is also included; the publication also includes cross-classification of income by industrial origin, of personal income by provinces, details of consumer expenditure on goods and services, details of government expenditure and deflated totals of national expenditure (i.e., expressed in terms of constant dollars). A number of additional tables are included.
National Accounts, Income and Expenditure, Quarterly	3	Quarterly	The Section prepares quarterly income and expenditure estimates. For the time being these statements are circulated on a confidential basis to a restricted number of senior government officials. The new sample survey of quarterly corporation profits is expected to fill the most important remaining statistical gap in the quarterlies.
Special Reports	—	Occasional	Occasional reports have been issued on a number of topics including net incomes of certain independent professional practitioners, inventory accounting methods of Canadian manufacturers, and export-import price indexes. The reports on professional incomes contain tables on the distribution of net income by size and by geographic region, including cities. Tables are also included on average earnings by age, by years in practice, and by type of employment (specialized practice, general practice, and salary employment). Information was also published on gross earnings, operating expenses and net earnings.

Number, Periodicity and Nature of Reports – Concluded

Report	Number	Periodicity	Contents
National Income Section – concluded:			
Special Reports – concluded	—	Occasional	<p>The report on inventory accounting methods gives information on inventory accounting methods used to value inventories at the three stages of fabrication: raw materials, goods in process, and finished goods. This information is shown by size of firms.</p> <p>In addition to these published reports, a number of reports prepared by the Section have not been published although the data were used for internal purposes. An example of this is a report on income of private duty nurses.</p>
Business Statistics Section:			
Canadian Statistical Review	1	Monthly	Complete, up-to-date summary of important series of economic statistics. Report embodies 68 pages of select statistical series covering the 14 months immediately preceding the month of issue and showing annual data for the last prewar year and the last complete year. Includes monthly article on current economic conditions prepared in the National Income Section.
Revue Statistique du Canada	1	Monthly	French edition of Canadian Statistical Review.
Survey of Production	1	Annual	Comprises data on the net values of commodity producing industries: agriculture, forestry, fisheries, trapping, mining, electric power, construction, and manufacturing. Report contains cross-classifications of these industries, by provinces and analytical text and charts.
Cheques Cashed in Clearing Centres	1	Monthly	Includes tables on the value of cheques cashed against current and savings accounts by chartered banks in 35 municipalities across Canada.
	1	Annual	Consolidates the monthly totals and presents an analysis of trends together with historical and analytical tables.
Commercial Failures	1	Quarterly	Number of bankruptcies by months, by industries, and by provinces, and the amount of assets and liabilities involved, by provinces, for failures falling under the provisions of the Bankruptcy and Winding Up Acts.
Technical Publication, "Revised Index of Industrial Production, 1935-1951"	1	Published 1952	Report on latest revised indexes, annual and monthly, including detailed discussions on sources, methods and problem together with an analysis of trends.

CONCLUSION

In the preceding pages it has been shown that Canadian statistics have been organized on a highly centralized basis. This does not mean that no statistical operations are carried on in other departments of the central government or in the various provinces. Many statistical series are a by-product of departmental or provincial activity. But it has been shown how the Bureau uses many of these sources of basic data in co-operation with the provinces and other departments of the central government to produce a comprehensive and co-ordinated system of Canadian statistics. It can be said that, with only minor exceptions, the statistical work done by government bodies other than the Bureau does not duplicate the work of the latter and that where departmental or provincial administrative statistics are collected which are useful for the comprehensive functions of the Bureau, co-operative arrangements exist to turn them over for compilation or to compile them in such manner as to fit into the general scheme of statistics for the Dominion as a whole. These co-operative arrangements with Provincial Governments frequently mean the securing by them of information additional to that required for purely administrative purposes but necessary for the more general purposes of the Bureau. While the Bureau strives to make use of all existing sources of relevant administration statistics outside its own organization, a very large proportion of its work is based upon data which it has to collect directly.

This centralization of Canadian statistics dates from 1918 when the Bureau of Statistics was established. Prior to that time they were, for the most part, decentralized in various government departments, though in 1905 a permanent Census and Statistics Office had been set up in the Department of Agriculture. This reflected the fact that a body of opinion was being created in the country in favour of co-ordinated statistics and constituted the first step toward the establishment of the present organization. The general situation at that time as regards statistics still left much to be desired and Parliament set up a departmental Commission in 1912 to study it. In its report the Commission stated:

"Though many of the statistical reports issued by various departments and branches are of undoubted excellence and value, there is apparent in the body of Canadian statistics, considered as a whole, a lack of coherence and common purpose. This is traceable to imperfect appreciation in the past of the fact that the statistics of the country, whether the product of one agency or several agencies, should constitute a single harmonious system, with all divisions in due correlation. Under the British North America Act, 1867, the Dominion is given specific au-

thority to deal with 'statistics', and while this must not be regarded as precluding statistical activity on the part of local governments it does apparently imply that statistics are a matter of national concern and may therefore properly come under the general co-ordinating authority of the Federal Government. No such viewpoint or function, however, has in the past been assumed by the Dominion. On the contrary each department or branch, charged either directly or indirectly with statistical investigation, has concerned itself primarily with the immediate purpose only in view. This is, from the usual standpoint, quite as it should be; a department is not to be expected to regard points of view beyond the scope of the administration assigned to it. Nevertheless, the effect statistically has been to inculcate routine and the neglect of opportunities for furnishing wider information and service.

"While this detachment has characterized the departments of the Dominion Government, still more has it been evident as between the several provinces and the Dominion, and between province and province, notwithstanding that the national importance of many of the functions of the provincial governments under Confederation calls urgently for statistical uniformity and homogeneity. This general condition we would consider to be the fundamental defect which must be met and overcome in the existing situation. Some of the unfortunate results which have followed may be briefly noted.

"(1) The scope of Canadian statistics has been restricted. On not a few points of vital interest to the country little or no statistical information exists in a form suitable for practical application. There has been no general comprehensive answer to the question, what statistics should a country such as Canada possess? i.e., what are the phenomena requiring the scientific measurements supplied by statistics if Canadian national development is to proceed to the best advantage? It may be argued that the demand for statistics may be trusted to create the supply; but to wait for the occasion to arise is often to be too late, and such a policy precludes the growth of a statistical system along logical lines.

"(2) Where the statistical activities of several bodies working along similar lines are virtually independent, duplication is inevitable. The notes of evidence show many cases both of actual duplication and of serious waste of effort through lack of co-operation between statistical authorities.

"(3) The statistics are unequal in quality and value. There are instances, both Dominion and provincial, of imperfect statistical method resulting from (a) lack of expert knowledge of the subject under investigation and (b) lack of appreciation of the nature and conditions of statistical measurement. The absence of leadership is nowhere more apparent than in the varying extent to which statistical methods have been developed in different branches. The whole question of reliability is involved in this. Without careful adjustment of method accuracy is impossible. On such a point no more severe criticism is possible than the statement that room for improvement exists.

"(4) The restriction of outlook has impaired promptitude in the issue of reports. Many statistics lose a large part of their value after a comparatively short lapse of time. Especially is this true in a rapidly-growing country like Canada.

"(5) Lack of unity and co-ordination prevents true comparisons between Canada and other countries. The recent growth of international trade and intercourse has rendered such comparisons more than ever necessary, and they have become indispensable to the national progress of Canada."

As a result of the recommendations of the Commission a Statistics Act was approved by Parliament in 1918, which provided for the establishment of the Bureau of Statistics and gave it authority —

- (a) "to collect, compile, analyze, abstract and publish statistical information relative to the commercial, industrial, financial, social and general activities and condition of the people;
- (b) "to collaborate with all other departments of the government in the collection, compilation and publication of statistical records of administration according to any regulations;
- (c) "to take the census of Canada as provided in this act; and
- (d) "generally to organize a scheme of co-ordinated social and economic statistics pertaining to the whole of Canada and to each of the provinces thereof."

One of the first activities of the newly created Bureau was to take over the statistical sections from other government departments. This was not accomplished in certain instances without protest. The argument was advanced that statistics pertaining to a specific field of administration could be produced best in the administering department because of the expert knowledge of the subject field possessed by its officers. On examination it was found that those in the departments concerned who were doing statistical work were primarily statisticians and not specialists in the specific administrative field. As statisticians the location in which they did their work was not of decisive importance. Proper liaison between Bureau and departmental officials would provide the necessary expert advice. Experience

has proved that any fears the departments had that they would not be adequately serviced with statistics after the transfer took place were unfounded. Departmental statistics were in general collected and compiled for administrative purposes. In a Bureau which is responsible for producing an overall system of statistics they must be made to fit into the general framework. Consequently the departments now receive not only statistics which will meet their administrative needs, but also a general background of data which make the administrative statistics more meaningful.

In addition to the taking over of the statistics of departments, many new fields of statistics had to be developed *de novo*, and numerous co-operative arrangements made with the provinces regarding vital statistics, statistics of agriculture, public finance, education, and others. It may be said that the first stage of the Bureau's evolution was completed about the year 1940. The work of "organizing a scheme of co-ordinated social and economic statistics pertaining to the whole of Canada and to each of the provinces thereof" had been completed practically in so far as covering all important fields was concerned. Nevertheless much remained to be done. World War II and the postwar period created an unprecedented demand for statistics. The growth of social security measures, the acceptance by governments of an overriding responsibility for high employment, the increased appreciation by businessmen of the value of statistics to assist them in meeting increasingly complex economic problems, the creation of the United Nations and its organizations all augmented greatly the demand for statistics, and particularly statistics of the highest quality. The work of the Statistical Commission and the Statistical Office of the Economic and Social Council, of the Statistical Sections of the UN organizations such as FAO, UNESCO, WHO, ILO, of the Inter American Statistical Institute, of OEEC and other international bodies is the clearest indication of the urgent need of a world development of comprehensive systems of statistics of high quality. In the work of promoting the development of statistics in countries where such development is needed, of bringing about statistical comparability by setting up standard classifications, promoting uniformity in statistical methods, concepts, and definitions, the work of these organizations has been aided greatly by the technical assistance program and the Colombo Plan.

To meet these greater needs of the postwar world the Bureau of Statistics in 1945 embarked upon a plan to streamline its organization with a view to the greatest possible emphasis on the qualitative aspects of its statistical output. Since additions to an already large staff were required, the plan also provided for strengthening the administrative personnel so that constant attention could be given to operational aspects, such as supplies, forms, equipment, machines, publication, etc., so as to ensure the greatest possible economy.

To implement the plan a Research and Development Division was created staffed by highly trained economists and statisticians whose functions were

to completely reorganize national income statistics and the National Accounts, to assist in the improvement of existing series of economic statistics and to organize for appropriate Divisions new economic series to fill gaps in the National Accounts.

A Special Surveys or Sampling Division was also organized to take a quarterly survey of the labour force and to carry out other surveys on the Sampling principle. The organization of this Division included the creation of branch offices of the Bureau at six centres across the Dominion. These offices eventually were used for other than sampling survey activities. For example, they acted as regional centres for taking the 1951 Census on a decentralized basis.

This emphasis on qualitative improvement was further exemplified in special research sections set up in the Agriculture and the Industrial Census Divisions. The work of these new Divisions and Sections has been most fruitful and the last few years have witnessed a steady improvement in the quality of Bureau statistics. Many statistical problems, of course, are still unsolved but the enthusiasm for research is firmly established and there will continue to be a striving for further improvements. The statistician's field is dynamic and offers abundant scope for the discovery of refined methods and techniques, better use of existing data, more penetrating analyses, and so on.

In so far as Canada is concerned, centralization of statistics has proven to be an unqualified success. Since 1939 the Bureau's continuing staff has doubled approximately. The statistics vote (exclusive of administration and census votes) has increased from less than \$1 million in 1939 to approximately \$3.8 million, or by 3.8 times. Total ordinary expenditures of the Federal Government were approximately \$400 million for the fiscal year ended March 31, 1940, and approximately \$2,680 million for the fiscal year ended March 31, 1951, or 6.7 times those of 1939. These figures reflect the higher price level as well as the increased functions which the Government has been called upon to perform. In the main, the growth of the Bureau has been the direct result of the expansion of Government functions. For instance, policies governing tariffs, taxation, unemployment insurance, old age pensions, national defence, etc., must be planned, their incidence studied and the extent of the burdens that they impose in relation to the national economy known, before they are put into effect. Reliable statistics are essential to provide the foundation for such knowledge.

Expansion of the Bureau, therefore, was inevitable. A Bureau of pre-war size would be quite inadequate to cope with the essential statistical needs of governments and business today. The streamlining, described previously, and the centralizing of statistical activities have kept costs to a minimum. The numerous new departments, economic research branches, control boards, government corporations and commissions that have come into existence since 1939 use statistics as the primary

material of their studies and research. Their needs must be met by the Bureau or they will be forced to create statistical units of their own. In the latter case the cost exceeds considerably that of expanding the central organization to meet individual requirements and many of the advantages of centralization inherent in a co-ordinated overall statistical plan administered by one organization would be lost.

Some of the advantages and economies of centralization which the Dominion Bureau of Statistics has found in its experience are the following:

- (1) Fewer highly trained persons such as mathematical statisticians or economists are required in a central bureau because a small group can service efficiently all the divisions of statistics. If statistics were decentralized in departments, every department would need specialists in several fields for its statistical unit and the total number would be multiplied several times.
- (2) In a central bureau there must be a large pool of costly and specialized tabulation equipment, and the problem of keeping it fully occupied is one that can be planned and met. Smaller units on specialized work would not be fully occupied. Only in a large unit like the Bureau is it economical to have a highly paid expert to look after the machinery and to keep abreast of the latest improvements in labour-saving devices.
- (3) There is an enormous saving in time and energy when such overall series as the National Accounts and National Income are in a Bureau which covers all statistical fields. Such series draw from almost every Division of the Bureau, and it is much easier to direct the work of each Division toward the National Income objective than it would be to depend on various departments co-operating toward that end.
- (4) It is a great saving of time for the public and to government officials to be able to go to one source for statistical data rather than having to draw parts from various departments. This is particularly true of economic research units.
- (5) A central bureau is more likely to be considered by the public as an objective fact-finding body not influenced by other than purely statistical aims.
- (6) In Canada the implementation of "A scheme of co-ordinated social and economic statistics pertaining to the whole of Canada and to each of the provinces thereof" requires constant and careful liaison with departments and agencies of the Federal and Provincial Governments on the one hand and with numerous business and other organizations. This can be achieved much more economically and effectively by a central bureau.

Opponents of centralization have argued that a large central bureau of statistics gets out of touch with the needs of the various departments of government and other bodies which use the statistics. In Canada, a country of some 14,000,000 people, this has not been the case. Undoubtedly a central statis-

tical bureau to be successful must lay special stress on the need for close liaison with the consumers of its statistics. This has been accepted by the Dominion Bureau of Statistics as a cardinal principle in its operation. By means of individual contacts, interdepartmental committees, Dominion-Provincial conferences, field work, meeting with trade associations, labour organizations and in numerous other ways, liaison is maintained not only with those who use the statistical end product, but also, in many instances, with those who supply the basic data. Centralization presents no insuperable obstacle to awareness of departmental or other consumer statistical needs.

Sometimes a central statistical bureau is more vulnerable than decentralized statistical units when governments are pressing for economies in departments. The total cost of statistical work is clearly revealed in the budget of a central bureau, whereas in a decentralized system it may not be so apparent. A central bureau might even be accused of over enthusiasm in the expansion of statistical output. This difficulty can best be met by the officials of the central bureau being continuously cost conscious and striving after the most efficient and economical methods of operation. It is then in a position to invite investigation as to the soundness and economy of its operation. This streamlining of operations has been part of the Bureau's postwar plan.

It was decided at the outset to set as an objective the improvement of Bureau operations to the extent that any examination from outside would yield a

high efficiency rating. Since then much has been accomplished. New procedures have introduced many savings, work of questionable value has been eliminated, more efficient and speedier methods introduced.

One of the outstanding achievements of this streamlining process was the introduction of radical changes in the methods of taking the census. As a result the 1951 Census is expected to cost approximately two million dollars less than if it had been taken by previous methods and the final results are scheduled to be published in one-half of the time taken formerly. The setting up of a Publications Board in the Bureau to examine critically all aspects of the publication program has resulted in material economies. In conjunction with this the introduction of vari-type offset printing has permitted large savings to be made in the cost of Bureau publications. These and many other efforts to reduce costs are described in detail in the annual reports of the Dominion Bureau of Statistics.

In concluding this document on the organization of the Dominion Bureau of Statistics it should be emphasized that it is an attempt to describe a fully centralized statistical system which has proved successful in this country. It implies no criticism of the other types of statistical systems which exist in some other countries. It has been described at considerable length in order that those countries which are commencing to build up a statistical system and those which contemplate reorganizing existing ones may have at hand for consideration among alternatives as complete a picture as possible of the fully centralized type.

Appendix A

THE STATISTICS ACT
OF
CANADA

Photographic reproduction of the Legislation under
which the Dominion Bureau of Statistics operates

11-12 GEORGE VI.

CHAP. 45.

An Act respecting the Dominion Bureau of Statistics.

[Assented to 30th June, 1948.]

HIS Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:

SHORT TITLE.

1. This Act may be cited as *The Statistics Act*.

Short title.

INTERPRETATION.

2. In this Act,

Definitions

(a) "Bureau" means the Dominion Bureau of Statistics; "Bureau".

(b) "carrier" means any person engaged in the business of transporting goods, wares, or merchandise by land, water or air, including an express company; "carrier"

(c) "department" includes any branch or agency of the Government of Canada or of the government of a province, as the case may be; "department".

(d) "Minister" means the Minister of Trade and Commerce; "Minister".

(e) "public utility" means (i) any person owning, operating or managing an undertaking for the supply of electricity, gas or water or for the transmission of oil by pipe line; and (ii) any telegraph, cable or telephone company; "public utility".

(f) "regulation" means any regulation, order, rule or instruction made or issued under this Act. "regulation".

GENERAL.

3. There shall be a Bureau under the Minister, to be called the Dominion Bureau of Statistics, the duties of which shall be

Dominion
Bureau of
Statistics

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To collect
statistical
information.

(a) to collect, compile, analyse, abstract and publish statistical information relative to the commercial, industrial, financial, social, economic and general activities and condition of the people;

To
collaborate
with
government
departments.

(b) to collaborate with all other departments of the government in the collection, compilation and publication of statistical records of administration according to any regulations;

To take the
census.

(c) to take the census of Canada as provided in this Act; and

To maintain a
co-ordinated
system of
social and
economic
statistics

(d) generally to organize a scheme of co-ordinated social and economic statistics pertaining to the whole of Canada and to each of the provinces thereof.

Dominion
Statistician,
appointment
and duties.

4. (1) The Governor in Council may appoint an officer to be called the Dominion Statistician, who shall hold office during pleasure, and whose duties shall be, under the direction of the Minister,

(a) to advise on all matters pertaining to statistical policy and to confer with the several departments of Government to that end;

(b) to organize and maintain a scheme of co-operation in the collection, classification and publication of statistics as between the several departments of government;

(c) to supervise generally the administration of this Act and to control the operations and staff of the Bureau; and

(d) to report annually to the Minister with regard to the work of the Bureau during the preceding year.

Officials.

(2) Such other officers, clerks and employees as are necessary for the proper conduct of the business of the Bureau may be appointed in the manner authorized by law.

Commis-
sioners,
enumerators,
and agents.

5. The Minister may employ from time to time, in the manner authorized by law, such commissioners, enumerators, agents or persons as are necessary to collect for the Bureau such statistics and information as he deems useful and in the public interest, relating to such commercial, industrial, financial, social, economic and other activities as he may determine, and the duties of such commissioners, enumerators, agents or persons shall be such as the Minister prescribes.

Oath of
office.

6. (1) Every officer, census commissioner, enumerator, agent and other person employed in the execution of any duty under this Act or under any regulation, before entering on his duties, shall take and subscribe the following oath:

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I,....., solemnly swear that I will faithfully and honestly fulfil my duties as.....

 in conformity with the requirements of the Statistics Act and of all regulations thereunder, and that I will not, without due authority in that behalf, disclose or make known any matter or thing which comes to my knowledge by reason of my employment as such.....

(2) The oath shall be taken before such person, and returned and recorded in such manner as the Minister prescribes. Attestation.

7. The Minister shall:

(a) make and prescribe such rules, regulations, instructions, schedules and forms as he deems requisite for conducting the work and business of the Bureau, the collecting, compiling and publishing of statistics and other information and the taking of any census authorized by this Act; Rules.

(b) prescribe what schedules, returns and information are to be verified by oath, the form of oath to be taken, and shall specify the officers and persons by and before whom the said oaths are to be taken. Verification.

STATISTICS.

8. (1) The Governor in Council shall not, nor shall the Minister, in the execution of the powers conferred by this Act, discriminate between individuals or companies to the prejudice of any such individuals or companies. No discrimination.

(2) Notwithstanding anything in this Act, the Minister may authorize the collection of statistics by means of the statistical method known as "sampling". Collection of statistics by "sampling".

9. (1) The Minister may enter into any arrangement with the government of any province providing for any matter necessary or convenient for the purpose of carrying out or giving effect to this Act, and in particular for all or any of the following matters: Arrangements with provincial governments.

(a) the execution by provincial officers of any power or duty conferred or imposed on any officer under this Act or any regulation;

(b) the collection by any provincial department or officer of any statistical or other information required for the purpose of carrying out this Act; and

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(c) the supplying of statistical information by any provincial department or officer to the Dominion Statistician.

Provincial
officers.

(2) All provincial officers executing any power or duty conferred or imposed on any officer under this Act or any regulation, in pursuance of any arrangement entered into under this section, shall, for the purposes of the execution of that power or duty, be deemed to be officers under this Act.

Schedules
that may be
sent
post free.

Regulations.

(3) All schedules or forms returned to a provincial department in pursuance of any arrangement entered into under this section shall be free of Canada postage, under such regulations as are from time to time made in that respect by the Governor in Council, and any person violating any such regulation is guilty of an offence and is liable upon summary conviction to a fine not exceeding fifty dollars.

Penalty.

Access to
public
records.

10. Every person who has the custody or charge of any provincial, municipal or other public records or documents, or of any records or documents of any corporation, from which information sought in respect of the objects of this Act can be obtained or which would aid in the completion or correction thereof, shall grant to any census officer, commissioner, enumerator, agent or other person deputed for that purpose by the Dominion Statistician, access thereto for the obtaining of such information therefrom.

Inquiries.

11. The Minister may, by special letter of instruction, direct any officer, census commissioner or other person employed in the execution of this Act to make inquiry under oath as to any matter connected with the taking of the census or the collection of statistics or other information or the ascertaining or correction of any supposed defect or inaccuracy therein; and such officer, census commissioner or other person shall then have the same power as is vested in any court of justice, of summoning any person, of enforcing his attendance and of requiring and compelling him to give evidence on oath, whether orally or in writing, and to produce such documents and things as such officer, census commissioner or other person deems requisite to the full investigation of such matter or matters.

Evidence
of
appointment.

12. Any letter purporting to be signed

(a) by the Minister or the Dominion Statistician, or by any person thereunto authorized by the Governor in Council, and giving notice of any appointment or removal of or setting forth any instructions to any person employed in the execution of this Act; or

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(b) by any officer, census commissioner or other person thereunto duly authorized, giving notice of any appointment or removal of or setting forth any instructions to any person employed under the superintendence of the signer thereof,

shall be, respectively, *prima facie* evidence of such appointment, removal or instructions, and that such letter was signed and addressed as it purports to be.

13. Any document or paper, written or printed, purporting to be a form authorized for use in the taking of a census, or the collection of statistics or other information, or to set forth any instructions relative thereto, which is produced by any person employed in the execution of this Act, as being such form or as setting forth such instructions, shall be presumed to have been supplied by the proper authority to the person so producing it, and shall be *prima facie* evidence of all instructions therein set forth. Presumption.

14. (1) The Minister shall, subject to the approval of the Governor in Council, cause to be prepared one or more tables setting forth the rates of remuneration or allowances for the several census commissioners, enumerators, agents and other persons employed in the execution of this Act, which may be a fixed sum, a rate per diem, or a scale of fees, together with allowances for expenses. Remuneration.

(2) Such remuneration or allowances and all expenses incurred in carrying this Act into effect shall be paid out of moneys provided by Parliament for that purpose. Voted by Parliament.

(3) No remuneration or allowance shall be paid to any person for any service performed in connection with this Act until the service required of such person has been faithfully and entirely performed. Condition of payment.

SECRECY.

15. (1) No individual return and no part of an individual return made, and no answer to any question put, for the purposes of this Act, shall, without the previous consent in writing of the person or of the owner for the time being of the undertaking in relation to which the return or answer was made or given, be published, nor, except for the purposes of a prosecution under this Act, shall any person, other than a person employed by the Bureau or working under arrangement with the Bureau and sworn under section six, be permitted to see any such individual return, part or answer. No individual return to be published or divulged

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No report to
reveal
individual
particulars.

(2) No report, summary of statistics or other publication under this Act shall contain any of the particulars comprised in any individual return so arranged as to enable any person to identify any particulars so published as being particulars relating to any individual person or business.

(3) This section does not apply to returns or answers made pursuant to section twenty-five or section twenty-six.

CENSUS OF POPULATION AND AGRICULTURE.

Census of
population
and
agriculture
every tenth
year.

16. The census of population and agriculture of Canada shall be taken by the Bureau, under the direction of the Minister, in the month of June in the year one thousand nine hundred and fifty-one and every tenth year thereafter, on a day to be fixed by the Governor in Council.

Manitoba,
Saskatchewan
and Alberta.

17. A census of population and agriculture of the provinces of Manitoba, Saskatchewan and Alberta shall be taken by the Bureau, under the direction of the Minister, in the month of June in the year one thousand nine hundred and fifty-six and every tenth year thereafter, on a day to be fixed by the Governor in Council.

Census
districts

18. The Governor in Council shall divide the country in respect of which the census is to be taken into census districts, and each census district into subdistricts to correspond respectively, as nearly as may be, with the electoral divisions and subdivisions for the time being, and in territories not so defined or so situated as to admit of adhering to boundaries already established, into special divisions and subdivisions, for the purpose of the census.

Details.

19. (1) Each census of population and agriculture shall be so taken as to ascertain with the utmost possible accuracy for the various territorial divisions of Canada, or of the provinces of Manitoba, Saskatchewan and Alberta, as the case may be,

(a) their population and the classification thereof, as regards name, age, sex, conjugal condition, relationship to head of household, nationality, race, education, wage-earnings, religion, profession or occupation and otherwise;

(b) the number of houses for habitation, whether occupied or vacant, under construction or otherwise, the materials thereof and the number of rooms inhabited;

(c) the area of occupied land and its value and its condition thereof as improved for cultivation, in fallow, in forest, unbroken prairie, marsh or waste land, and otherwise; the tenure and acreage of farms and the value of farms, buildings and implements;

(d)

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- (d) the products of farms, with the values of such products and the number and value of domestic animals within the preceding census or calendar year; and
- (e) such other matters as may be prescribed by the Governor in Council.

(2) To promote economy, the method of statistical sampling may be used for the securing of some of the information specified in subsection one if, in the opinion of the Dominion Statistician, the sampling method will yield data adequate to meet census needs and the Dominion Statistician may, as he deems advisable, omit some of such information from the quinquennial census if, in his opinion, the change at five-year intervals is not of sufficient importance to warrant the expense of collection and compilation.

CENSUS OF INDUSTRY, CONSTRUCTION, TRADING AND SERVICE ESTABLISHMENTS, ETC.

20. A census with regard to mines, quarries, fisheries and forests, and of manufacturing, construction, commercial, and service establishments, and of such other industrial, trading, business and professional activities as may be prescribed by the Minister, shall be taken at such intervals as the Minister may direct, so as to ascertain with the utmost possible accuracy the products and operations thereof. Census of industry, etc.

21. (1) The Dominion Statistician shall, under the direction of the Minister, prepare forms for the collection of such data as may be, in his judgment, desirable for the proper presentation of industrial statistics, and the said forms shall embody inquiries as to the Statistical data.

- (a) name under which business is carried on;
- (b) kind of goods manufactured or business done;
- (c) capital invested;
- (d) principal stock or raw materials used, and total value thereof;
- (e) gross quantity and value of articles manufactured;
- (f) number of persons employed, distinguished as to sex, adults and children;
- (g) power used or generated;
- (h) total wages and salaries paid;
- (i) number of days on which business was carried on, and any other special matter.

(2) The Minister may employ agents or other persons for the collection of the statistics referred to in subsection one or a form may be sent to the person from whom information is desired and such person shall answer the inquiries Completion of forms.

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thereon and return the same to the Bureau, properly certified as accurate, not later than the time prescribed thereon or such extended time as the Minister in his discretion may allow.

22. The Dominion Statistician shall, under the direction of the Minister,

Statistics of
commerce
and
navigation
compiled in
annual report.

(a) annually prepare a report on the statistics of commerce and navigation of Canada with foreign countries, which shall, according to the principles and in the manner defined in the regulations,

Contents of
annual report.

(i) state the kinds, quantities and values of the merchandise entered and cleared coastwise into and from the customs collection ports of Canada.

(ii) comprehend all goods, wares and merchandise exported from Canada to other countries.

(iii) comprehend all goods, wares and merchandise imported into Canada from other countries,

(iv) comprehend all navigation employed in the foreign trade of Canada;

Monthly
reports.

(b) prepare and publish monthly reports of the exports and imports of Canada, including the quantities and values of accounts drawn from the warehouse and such other statistics relative to the trade and industry of the country as the Minister may consider expedient.

Returns of
imports and
exports from
customs.

23. The Department of National Revenue shall send to the Dominion Statistician, in such manner and form and at such periods as the Governor in Council may prescribe, returns of imports from and exports to foreign countries arriving at or leaving Canada by water, land or air, and of the navigation employed in the foreign trade of Canada.

Domestic
trade.

24. The Dominion Statistician shall prepare and make a report annually containing the results of any information collected during the preceding year upon the domestic trade of Canada.

CARRIERS AND PUBLIC UTILITIES.

Annual
returns
of carriers and
public
utilities

25. (1) When so required by the Minister, every carrier and public utility shall annually prepare returns in such form as may be prescribed by the Governor in Council with respect to its operations.

Certi-
fication.

(2) Such returns shall be signed and certified as accurate by the individual concerned or by the secretary or other responsible officer if the carrier or public utility is a corporation.

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(3) Such returns shall be made for the period beginning from the day to which the then last yearly returns made by the carrier or public utility extended, or if no such returns have been previously made, from the commencement of the operation of the carrier or public utility and ending with the last day of December in the year for which the returns are to be made or with such other day as the Minister may direct. Period included.

(4) Such returns, completed as required by this section, shall be forwarded by such carrier or public utility to the Dominion Statistician within one month after the first day of February in each year or within one month after any other day directed by the Minister under subsection three. Date of forwarding.

26. (1) When so required by the Minister, every carrier shall prepare returns of his traffic and operations monthly, and every public utility shall prepare returns of its operations monthly, that is to say, from the first to the close of the month inclusive; such returns to be in accordance with the form prepared by the Dominion Statistician and approved by the Minister. Monthly returns.

(2) Such return, signed by the individual concerned or, if the carrier or public utility is a corporation, by an officer responsible for the correctness of the same, shall be forwarded to the Dominion Statistician within forty-five days from the end of the month to which the return relates. Date of forwarding

27. All returns made in pursuance of section twenty-five or twenty-six shall be privileged communications and shall not be evidence in any court whatever, except in any prosecution for Returns to be privileged

- (a) default in making such returns in accordance with the requirements of this Act;
- (b) perjury in making any oath required by this Act in connection with such returns;
- (c) forgery of any such return; or
- (d) signing any such return knowing the same to be false.

CRIMINAL STATISTICS.

28. The clerk of every court or tribunal administering criminal justice, or in case of there being no clerk, the judge or other functionary presiding over such court or tribunal shall, before the end of October in each year, fill in and transmit to the Dominion Statistician, for the year ending the thirtieth day of September preceding, such schedules as he receives from time to time from the Courts to furnish criminal statistics.

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Dominion Statistician relating to the criminal business transacted in such court or tribunal.

Wardens and
sheriffs.

29. The warden of every penitentiary and reformatory and the sheriff of every county and district shall, before the end of October in each year, fill in and transmit to the Dominion Statistician, for the year ending the thirtieth day of September preceding, such schedules as he receives from time to time from the Dominion Statistician relating to the prisoners committed to the penitentiary, reformatory or jail.

Records

30. Every person required to transmit any schedules mentioned in section twenty-eight or twenty-nine shall from day to day make and keep entries and records of the particulars to be comprised in such schedules.

Pardons.

31. The Secretary of State shall, before the end of October in each year, cause to be filled in and transmitted to the Dominion Statistician such schedules for the year ending the thirtieth day of September last preceding, relative to the cases in which the prerogative of mercy has been exercised, as the Minister may prescribe.

GENERAL STATISTICS.

General
statistics.

32. Subject to the direction of the Minister, the Bureau shall collect, compile, analyse, abstract and publish statistics in relation to all or any of the following matters:

- (a) population;
- (b) births, deaths, marriages, divorces;
- (c) epidemiology, morbidity;
- (d) immigration and emigration;
- (e) employment, unemployment, payrolls, man-hours;
- (f) agriculture, horticulture, dairying, cold storage;
- (g) factories, mines and productive industries generally;
- (h) education;
- (i) public and private finance;
- (j) wholesale and retail trade and supplying of services;
- (k) hospitals, mental institutions, tuberculosis institutions, charitable and benevolent institutions;
- (l) prices and cost of living;
- (m) any other matters prescribed by the Minister or by the Governor in Council.

Special
statistics.

33. The Governor in Council may authorize the Minister to have any special statistical investigation made that is deemed advisable, and may prescribe the manner and by what means such investigation shall be made.

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OFFENCES AND PENALTIES.

34. Every person employed in the execution of any duty under this Act or any regulation who,

- (a) after having taken the prescribed oath, deserts from his duty, or wilfully makes any false declaration, statement or return touching any such matter; or Desertion or false declaration.
- (b) in the pretended performance of his duties thereunder, obtains or seeks to obtain information which he is not duly authorized to obtain, or Unlawful information.
- (c) fails to keep inviolate the secrecy of the information gathered or entered on the schedules and forms, and who, except as allowed by this Act and the regulations, divulges the contents of any schedule or form filled in, in pursuance of this Act or any regulation, or any information furnished in pursuance of this Act or any regulation; Improperly divulging information.

is guilty of an offence and is liable, on summary conviction, to a fine not exceeding three hundred dollars, or to imprisonment for a term not exceeding six months, or to both fine and imprisonment.

35. Every person who, without lawful excuse,

- (a) refuses or neglects to answer, or wilfully answers falsely, any question requisite for obtaining any information sought in respect of the objects of this Act or any regulation, or pertinent thereto, which has been asked of him by any person employed in the execution of any duty under this Act or any regulation; or Refusal to answer or gives false answer.
- (b) refuses or neglects to furnish any information or to fill in to the best of his knowledge and belief any schedule or form which he has been required to fill in, and to return the same when and as required of him under this Act or any regulation, or wilfully gives false information or practises any other deception thereunder; Refusal or neglect, false information or deception.

is, for every such refusal or neglect, or false answer or deception, guilty of an offence and is liable, upon summary conviction, to a fine not exceeding one hundred dollars, or to imprisonment for a term not exceeding three months, or to both fine and imprisonment. Penalty

36. Every person who has the custody or charge of any provincial, municipal or other public records or documents, or of any records or documents of any corporation, from which information sought in respect of the objects of this Act or any regulations can be obtained, or which would aid in the completion or correction thereof, who Wilful refusal or neglect to grant access to records

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refuses or neglects to grant access thereto to any census officer, commissioner, enumerator, agent or other person deputed for that purpose by the Dominion Statistician, and every person who wilfully hinders or seeks to prevent or obstruct such access, or otherwise in any way wilfully obstructs or seeks to obstruct any person employed in the execution of any duty under this Act or any regulation, is guilty of an offence and is liable, on summary conviction, to a fine not exceeding three hundred dollars and not less than fifty dollars, or to imprisonment for a term not exceeding six months and not less than one month, or to both fine and imprisonment.

Leaving
notice.

37. The leaving by an enumerator, agent or other person employed in the execution of this Act or any regulation, at any house or part of a house, of any schedule or form purporting to be issued under this Act or any regulation, and having thereon a notice requiring that it be filled in and signed within a stated time by the occupant of such house or part of a house, or in his absence by some other member of the family, shall, as against the occupant, be a sufficient requirement so to fill in and sign the schedule or form, though the occupant is not named in the notice, or personally served therewith.

Leaving
notice at
office.

38. The leaving by an enumerator or agent or other person employed in the execution of this Act or any regulation at the office or other place of business of any person or the delivery by registered letter to any person or his agent, of any schedule or form purporting to be issued under this Act or any regulation, and having thereon a notice requiring that it be filled in and signed within a stated time, shall, as against the person be a sufficient requirement to fill in and sign the schedule or form, and if so required in the notice, to mail the schedule or form within a stated time to the Bureau.

Disclosing
secret
information

39. Every person employed under this Act who
(a) wilfully discloses or makes known directly or indirectly to any person not entitled under this Act or any regulation to receive the same, any information obtained by him in the course of his employment which might exert an influence upon or affect the market value of any product or article, or

Unauthor-
ized use of
information.

(b) uses any such information for the purpose of speculating in any product or article,

Penalty.

is guilty of an offence and is liable, on summary conviction, to a fine not exceeding five thousand dollars or to imprisonment for a term not exceeding five years or to both fine and imprisonment.

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40. Any fine imposed and recovered for any offence under this Act shall belong to His Majesty for the public uses of Canada. Application of fines.

41. Where an offence against this Act or any regulation has been committed the complaint may be made or the information laid within twelve months from the time when the matter of the complaint or information arose. Limitation of time for prosecution.

42. The *Statistics Act*, chapter one hundred and ninety of the Revised Statutes of Canada, 1927, is repealed. Repeal.

OTTAWA: Printed by EDMOND CLOUTIER, C.M.G., B.A., L.Ph.,
Law Printer to the King's Most Excellent Majesty.

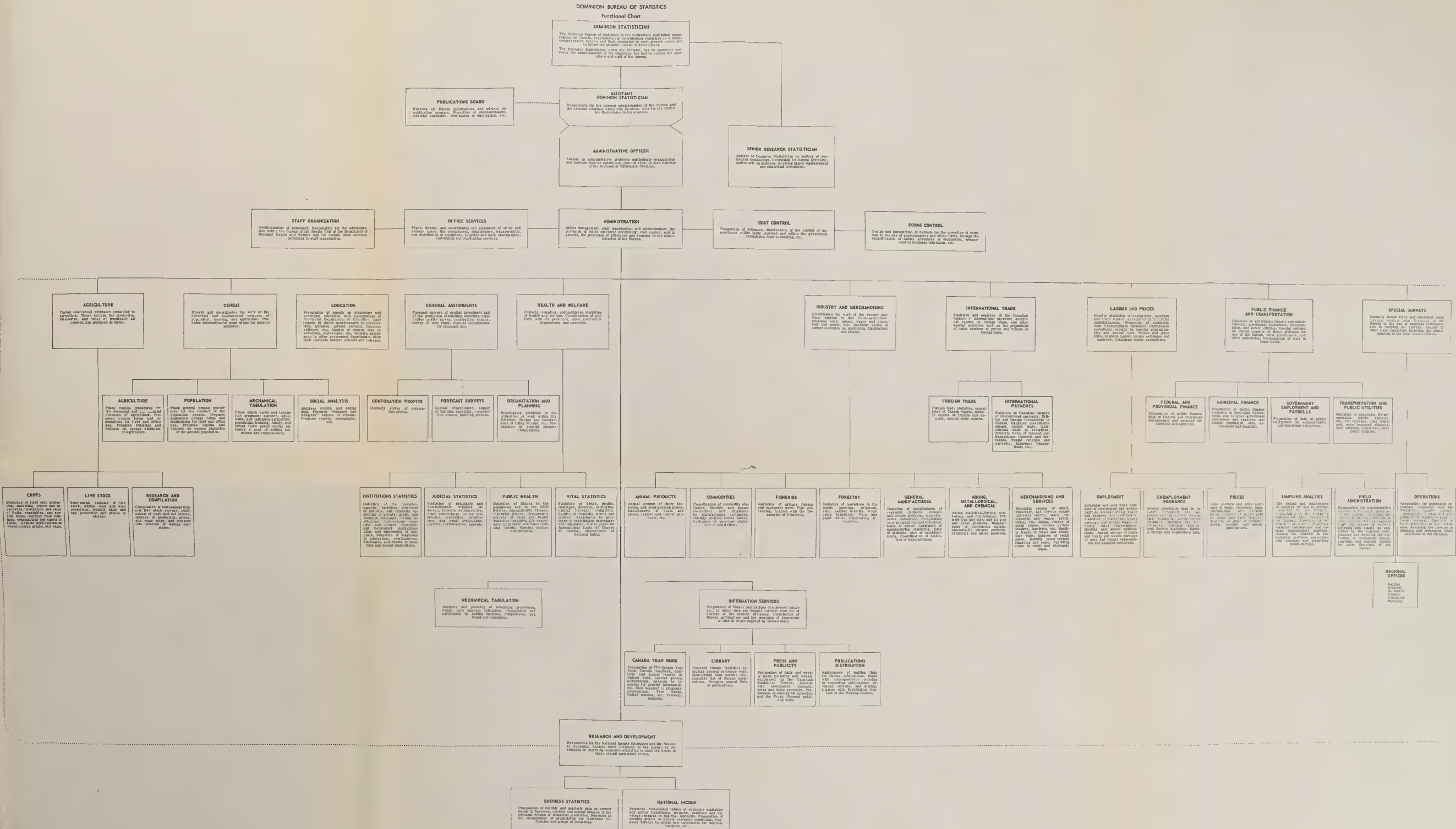
Appendix B

DOMINION BUREAU OF STATISTICS

FUNCTIONAL
CHART

DOMINION BUREAU OF STATISTICS

Functional Chart



Appendix C

DOMINION BUREAU OF STATISTICS

Estimate of Funds required
and Actual Expenditures by Votes and Allotments
for the fiscal years 1950-51, 1951-52 and
Estimate of Funds required
for the fiscal year
1952-53

DOMINION BUREAU OF STATISTICS

Estimate of Funds Required, and Actual Expenditures by Votes and Allotments for the Fiscal Years 1950-51,
1951-52 and Estimate of Funds Required for the Year 1952-53

Votes and Primaries	1950-51		1951-52		1952-53
	Estimated	Expended	Estimated	Expended	Estimated
	\$	\$ ¢	\$	\$ ¢	\$
Administration Vote:					
Salaries:					
Permanent Positions	73,995	72,665.95	67,848	80,501.01	86,490
Temporary Assistance	91,170	78,399.43	72,800	58,943.54	72,524
Total for salaries	165,165	151,065.38	140,648	139,444.55	159,014
Corps of Commissionaires Service.....	1,750	1,701.36	1,750	1,793.40	1,900
Local Transportation	325	373.30	400	390.85	600
Travelling Expenses	3,000	617.73	1,500	265.20	2,500
Freight, Express and Cartage	100	55.21	100	39.63	100
Telephone and Telegrams	75	71.57	75	50.48	100
Office Stationery, Supplies and Equipment.....	2,000	796.17	1,000	54.83	2,000
Truck Operations	400	706.31	800	836.26	1,000
Sundries	500	18.36	482	22.40	500
Totals for Administration Vote.....	173,315	155,405.39	146,755	142,897.60	167,714
Statistics Vote:					
Salaries:					
Permanent Positions	963,595	1,066,508.26	1,114,967	1,548,935.24	1,678,840
Temporary Assistance	1,662,060	1,527,173.07	1,762,865	1,264,089.46	1,449,077
Total for salaries	2,625,655	2,593,681.33	2,877,832	2,813,024.70	3,127,917
Vital Statistics Fees	65,000	59,818.10	67,000	72,737.00	70,000
Criminal Statistics Fees	16,000	19,945.45	16,000	18,631.45	18,000
Travelling Expenses	52,360	36,488.76	50,770	42,992.11	62,425
Freight, Express and Cartage	4,800	6,492.77	5,500	7,565.36	7,500
Telephones, Telegrams and Postage	20,000	17,594.06	18,000	19,566.57	22,500
Printing of Dominion Bureau of Statistics Publications	132,000	193,974.37	152,000	148,715.28	146,261
Office Stationery, Supplies and Equipment.....	331,535	311,251.86	295,000	349,889.32	266,538
Rental of Office Equipment.....	144,000	135,224.65	137,176	137,400.55	142,473
Photographic Supplies	13,000	8,543.68	8,000	6,836.85	8,000
Contribution to the Inter American Statistical Institute	7,087	2,705.85	3,000	2,971.48	3,100
Sundries	5,000	547.39	5,000	568.98	4,000
Publications for Crop Correspondents	16,000	12,182.98	15,000	17,350.37	18,000
Conferences on Agricultural, Finance and Health and Welfare Statistics	11,800	2,559.59	11,550	6,650.33	12,900
Remuneration and Expenses of Enumerators of the Field Sampling Organization:					
Professional and Special Services.....	110,000	104,372.68	110,000	114,571.75	125,000
Travelling Expenses	30,000	21,633.68	30,000	25,893.88	20,000
Memberships in Technical Organizations, Scientific Journals, etc. for reference purposes	7,200	3,771.19	4,000	4,126.66	6,000
Remuneration and Expenses of Enumerators to secure statistical returns and names of new stores:					
Professional and Special Services.....	6,000	2,546.62	3,900	2,568.31	3,900
Travelling Expenses	2,000	938.94	1,100	897.53	1,100
Admissions and Discharges—Mental Hospitals (Age-Sex Census)....					
Professional and Special Services—Enumerators	2,650	—	2,650	2,486.25	
Office Stationery, Supplies and Equipment.....	350	—	350	46.09	
Survey of facilities and services in Welfare Institutions:					
Salaries—Temporary Assistance			9,440	9,873.21	
Professional and Special Services—Enumerators			4,000	2,510.20	
Printing of Reports			660	—	
Office Stationery, Supplies and Equipment.....			900	1,552.44	
Family Expenditure Survey:					
Salaries—Temporary Assistance					4,860
Professional and Special Services—Enumerators					10,000
Travelling Expenses					5,740
Office Stationery, Supplies and Equipment.....					2,400
Totals for Statistics Vote	3,602,437	3,534,273.95	3,828,828	3,809,426.67	4,088,614

**Estimate of Funds Required, and Actual Expenditures by Votes and Allotments for the Fiscal Years 1950-51,
1951-52 and Estimate of Funds Required for the Year 1952-53 — Continued**

Votes and Primaries	1950-51		1951-52		1952-53
	Estimated	Expended	Estimated	Expended	Estimated
	\$	\$ ¢	\$	\$ ¢	\$
Census of Population, Agriculture, Distribution and Fishery Vote:					
Census of Population and Agriculture—Continuing Operations:					
Salaries:					
Permanent Positions	105,975	116,241.09	125,778	167,730.56	227,274
Temporary Assistance	124,245	109,299.73	145,254	107,485.56	193,837
Total for salaries	230,220	225,540.82	271,032	275,216.12	421,111
Travelling Expenses					2,000
Freight, Express and Cartage.....	100	96.99	50	16.64	50
Telephones, Telegrams and Postage.....	100	62.26	50	—	50
Printing of 1946 Census Reports	37,500	8,721.60	25,000	16,889.06	—
Office, Stationery, Supplies and Equipment.....	5,700	1,712.08	3,300	300.52	3,168
Photographic Supplies	7,000	1,637.24	500	—	300
Sundries	100	—	100	3.19	100
Contribution to the Inter American Statistical Institute Committee on the 1950 Census of the Americas	3,543	3,382.05			
Total of Continuing Operations	284,263	241,153.04	300,032	292,425.53	426,779
Expenses in connection with the 1951 Census of Population and Agriculture:					
Salaries—Temporary Assistance	225,840	157,659.60	2,856,205	2,316,961.64	488,916
Professional and Special Services—Commissioners, Enumerators, Guides	162,000	57,040.14	2,654,505	2,536,709.05	
Corps of Commissionaires Services.....			6,000	6,716.60	
Travelling Expenses	33,000	12,825.43	537,125	554,956.29	
Freight, Express and Cartage	10,000	11,909.33	30,000	39,482.73	
Postage		2,500.72	5,000	13,000.00	3,000
Telephones, Telegrams and other Communication Services	500	340.67	4,240	10,050.52	
Printing of 1951 Census Reports:					
Salaries					46,500
Printing					58,200
Advertising	5,000	1,329.56	47,050	48,111.68	
Office Stationery, Supplies and Equipment.....	500,735	203,407.41	644,964	523,432.59	9,800
Rental of Office Equipment.....		2,469.10			250,036
Rentals of offices and halls			75,000	75,276.37	
Sundries		211.06	5,000	2,284.46	1,000
Sample Survey					150,000
Maps	25,000	8,542.38			
Training Films	25,000				
Total Expenses for the 1951 Census of Population and Agriculture.....	987,075	458,235.40	6,865,089	6,126,981.93	1,007,452
Expenses in connection with the 1951 Census of Distribution (Merchandising Establishments):					
Salaries—Temporary Assistance	4,680		66,580	48,352.26	116,960
Professional and Special Services—Commissioners and Enumerators	200	150.75	20,000	22,606.24	
Travelling Expenses	1,000	287.13			350
Printing of 1951 Census Reports			25,150	16,661.29	250
Office Stationery, Supplies and Equipment.....	1,600	6,410.02			975
Rental of Office Equipment.....					5,400
Advertising	20	13.44			
Total Expenses for Census of Distribution	7,500	6,861.34	111,730	87,619.79	123,935
Census of the Fishery					70,000
Preparation of 1921 Census of Population Index for Old Age Pensions Verifications:					
Salaries—Temporary Assistance				154,707.01	92,580
Travelling Expenses				160.94	
Freight, Express and Cartage.....				66.85	
Rental of Office Equipment.....				7,557.50	6,120
Office Stationery, Supplies and Equipment.....				2,436.33	4,500
Total Expenses for Preparation of the 1921 Census Index.....				164,928.63	103,200
Totals for Census Vote	1,278,838	706,249.78	7,276,851	6,671,955.88	1,731,366
Totals for Dominion Bureau of Statistics	5,054,590	4,395,929.12	11,252,434	10,624,280.15	5,987,694

**Estimate of Funds Required, and Actual Expenditures by Votes and Allotments for the Fiscal Years 1950-51,
1951-52 and Estimate of Funds Required for the Year 1952-53 — Concluded**

Summary	1950-51		1951-52		1952-53
	Estimated	Expended	Estimated	Expended	Estimated
	\$	\$ ¢	\$	\$ ¢	\$
Administration	173,315	155,405.39	146,755	142,897.60	167,714
Statistics.....	3,602,437	3,534,273.95	3,828,828	3,809,426.67	4,088,614
Census of Population, Agriculture, Distribution and Fishery:					
Continuing Operations	284,263	241,153.04	300,032	292,425.53	426,779
Non-Continuing Operations:					
1951 Census of Population and Agriculture.....	987,075	458,235.40	6,865,089	6,126,981.93	1,007,452
1951 Census of Distribution (Merchandising Establishments)	7,500	6,861.34	111,730	87,619.79	123,935
Census of the Fishery					70,000
Preparation of the 1921 Census of Population Index for Old Age Pensions Verifications				164,928.63	103,200
Totals for non-continuing Operations	994,575	465,096.74	6,976,819	6,379,530.35	1,304,587
Total for Census Vote.....	1,278,838	706,249.78	7,276,851	6,671,955.88	1,731,366
Totals for Dominion Bureau of Statistics.....	5,054,590	4,395,929.12	11,252,434	10,624,280.15	5,987,694

Appendix D

CIVIL SERVICE COMMISSION
SALARY RANGES

IN EFFECT IN THE
DOMINION BUREAU OF STATISTICS

AUGUST - 1952

Administration Officer Grade 2	4010	4150	4290	4430	4570	4710	4830
" " " 3	-	-	4280	4480	4680	4880	5140
" " " 4	-	-	-	4900	5100	5280	5540
" " " 6	-	-	5540	5800	6060	6300	6480
Assistant Dominion Statistician	-	-	-	7600	7900	8200	8500
Assistant Technician Grade 3	-	-	-	2630	2750	2870	2990
Chief of Agricultural Statistics	-	-	-	6300	6600	6900	7200
Chief of Demography	-	-	-	6300	6600	6900	7200
Chief Clerk	-	4400	4540	4680	4820	4960	5100
Clerk Grade 1	-	-	1380	1490	1600	1710	1780
" " 2A	-	1690	1800	1910	2020	2130	2240
" " 2B	-	-	-	2190	2300	2410	2480
" " 3	-	-	-	2480	2590	2700	2770
" " 4	-	-	-	2770	2880	2990	3110
Commodity Officer Grade 1	3340	3480	3620	3760	3900	4040	4180
Departmental Accountant Grade 5	-	-	-	4520	4660	4800	4860
Dominion Statistician	-	-	-	-	-	-	10000
Economist Grade 1	-	-	-	2940	3120	3300	3540
" " 2	-	-	3300	3540	3780	4020	4220
" " 3	-	-	-	4220	4420	4620	4880
" " 4	-	-	-	4620	4820	5020	5260
" " 5	-	-	-	4940	5140	5320	5580
" " 6	-	-	-	5260	5460	5640	5920
" " 7	-	-	-	5580	5780	5980	6220
" " 9	-	-	-	-	6300	6600	6900
Editor Grade 1	2850	2990	3130	3270	3410	3550	3690
" " 2	-	-	3830	3970	4110	4250	4390
" " 3	-	-	4600	4740	4880	5000	5120
Head Clerk	-	3670	3810	3950	4090	4230	4350
Librarian Grade 1	-	-	2640	2780	2920	3060	3130
" " 2	2990	3130	3270	3410	3550	3690	3830
" " 3	-	3830	3970	4110	4250	4390	4520
Messenger	-	-	-	1840	1950	2060	2180
Office Appliance Operator Grade 1	-	-	1380	1490	1600	1710	1780
" " 2A	-	1690	1800	1910	2020	2130	2240
" " 2B	-	-	-	2190	2300	2410	2480
" " 3	-	-	-	2480	2590	2700	2770
Office Boy	-	-	960	1020	1080	1140	1200
Principal Clerk	-	-	3110	3250	3390	3530	3670
Secretary to Executive	-	-	2770	2910	3050	3190	3330
Senior Messenger	-	-	-	2190	2300	2410	2480
Senior Research Statistician	-	-	-	6600	6900	7200	7500
Stenographer Grade 1	-	-	1380	1490	1600	1710	1780
" " 2A	-	-	1800	1910	2020	2130	2240
" " 2B	-	-	-	2190	2300	2410	2480
" " 3	-	-	-	2480	2590	2700	2770
Statistician Grade 1	-	-	-	2940	3120	3300	3540
" " 2	-	-	3300	3540	3780	4020	4220
" " 3	-	-	-	4220	4420	4620	4880
" " 4	-	-	-	4620	4820	5020	5260
" " 5	-	-	-	4940	5140	5320	5580
" " 6	-	-	-	5260	5460	5640	5920
" " 7	-	-	-	5580	5780	5980	6220
" " 8	-	-	-	5980	6220	6460	6580
Statistics Officer, Part-time	-	-	-	-	-	-	990
Supervising Clerk	-	-	-	3670	3810	3950	4020
Supervisor of Office Services Grade 5	-	4150	4290	4430	4570	4710	4830
Technical Officer Grade 1	-	-	2640	2780	2920	3060	3130
" " 2	-	3130	3270	3410	3550	3690	3830
" " 3	-	3830	3970	4110	4250	4390	4520
" " 5	-	4600	4740	4880	5000	5120	5240
" " 6	-	-	-	4920	5120	5300	5560
Technician Grade 1	-	-	2990	3130	3270	3410	3480
" " 2	-	-	-	3480	3620	3760	3830
" " 3	-	-	-	3830	3970	4110	4180
Typist Grade 1	-	-	1380	1490	1600	1710	1780
" " 2A	-	1690	1800	1910	2020	2130	2240
" " 2B	-	-	-	-	2190	2300	2370

Census (Positions established for the 1951 Census on a temporary organization basis)

Census Clerk	2050	Census Senior Supervisor	2880
" Machine Operator	2050	" Supervisor	2550
" Messenger	1740	" Tabulation Assistant	3210

Appendix E

DOMINION BUREAU OF STATISTICS
TUNNEY'S PASTURE
OTTAWA

Appendix E

THE NEW DOMINION BUREAU OF STATISTICS BUILDING

The new Bureau of Statistics is a functional building specially designed for statistical work. Though of attractive modern appearance both inside and out, the emphasis in its construction has been on utility, and it is, in effect, a statistics factory.

A three-storey building, except in the centre part where it is five floors high, it has four pairs of wings. For this reason, much of the wall area is taken up by windows, thus ensuring a maximum of natural light which is of particular importance for the close work necessary in the production of statistics. In addition, there is a complete system of fluorescent lighting. To further reduce possible eye strain, walls and ceilings are of different pastel colours, depending upon the location and light; and the linoleums fit the colour schemes.

The main entrances are between the second and third wings in the middle of the building. These are spacious, and dignity and beauty are added by marble appointments. The wing structure permits large open rooms, the best operating medium for many varieties of statistical work, both mechanical and clerical. The flow of operations determined the layout of the building. Such service sections as Printing, Supplies, and Mailing are located with a view to a maximum of convenience and efficiency, and the Divisions of the Bureau which are most dependent on Mechanical Tabulation are closest to it.

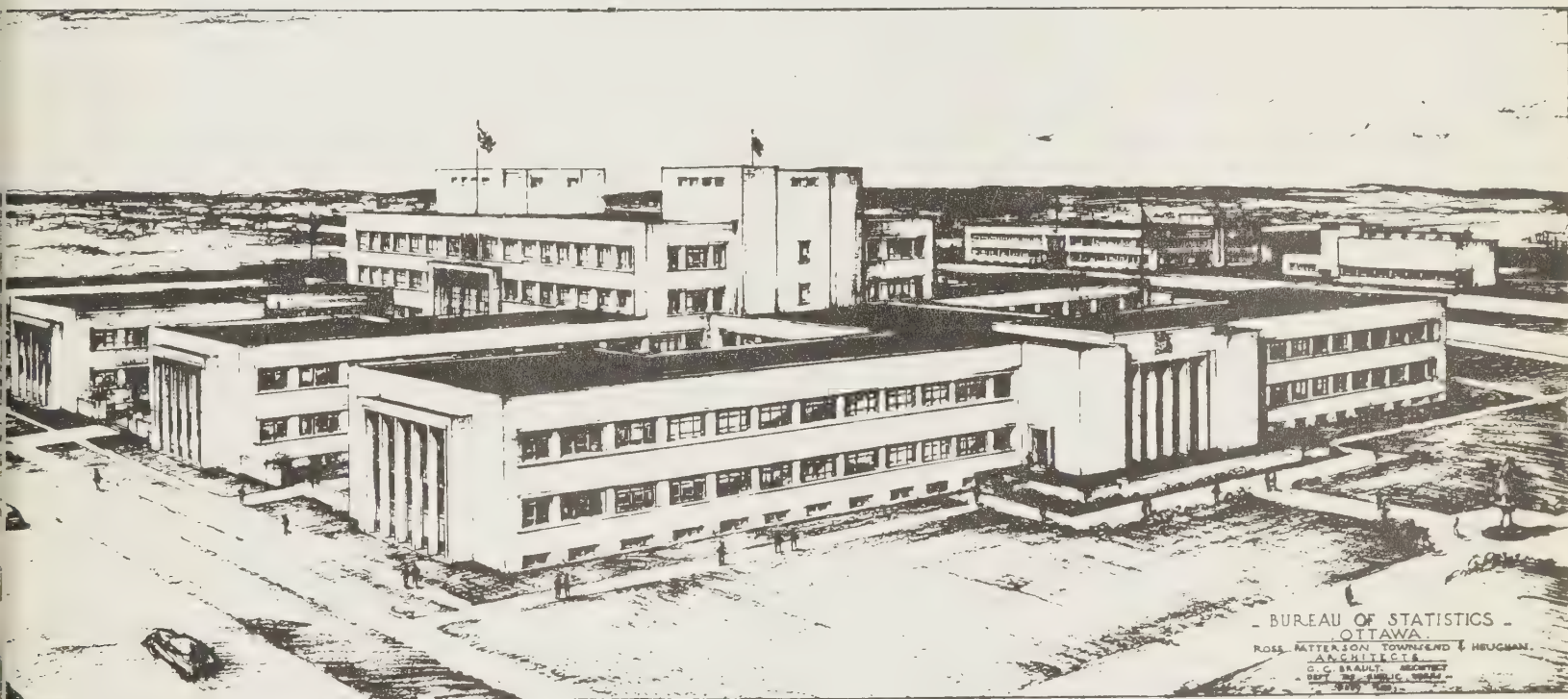
Since a statistics bureau must have an exceptionally large number of electric outlets to service its adding, calculating, and tabulating equipment, as well as telephones and intercommunicating systems, a special type of flooring was installed, known as "Q" flooring. This is a floor of cellular steel construction into which new wires can be inserted at any time through header ducts. No tearing up of floors or breaking into walls or suspension of wires from walls or ceilings, or dangerous wires along floors will be necessary for future expansion. In addition, the building is basically equipped for complete air conditioning, requiring only the addition of a refrigeration unit. At present it operates to change the air.

To minimize the noise in areas where mechanical tabulations are carried on, the ceiling has acoustical tiles. Other areas have acoustical plaster. The

building has a high fireproof rating, and the ground floor contains large rooms capable of storing safely census and other statistical documents. A tastefully decorated and fully equipped cafeteria, capable of seating 1500 people, designed to meet the needs not only of the Bureau but also of the other new buildings which are occupying or will occupy the same area, is located on the ground floor. Locker rooms also have been provided on the ground floor, where each member of the staff may keep his or her belongings under lock and key. Each of the two locker rooms has a shower room adjoining it for the convenience of those participating in games in the area adjacent to the Bureau.

The new building is spacious enough to house all Bureau staff under one roof, which will ease administrative problems and facilitate integration of the work of the different Divisions, but all parts of it can be contacted from a central control room by means of a public address system, permitting the quick "paging" of individuals when necessary. This system will be used also for making important announcements. The speed, thoroughness, and labour-saving of this device are its principal merits, but it can be used for such additional purposes as broadcasting music. It has been found that the broadcasting of suitable music where mechanical and routine operations are being carried on improves working conditions and makes for greater output.

For successful administration of a centralized statistical bureau, constant and close liaison is absolutely essential with those who furnish basic data and those who use the finished results. Some of this liaison must be accomplished by visits of Bureau officials to officials in provincial and municipal governments, federal government departments, business organizations, and so on. A good deal of it can only be accomplished by conferences in Ottawa, such as Dominion-Provincial conferences in various fields of statistics, conferences with representatives from industrial and trade associations, with select groups from specific industries and a variety of others. Hitherto the accommodation for such conferences was lacking in the Bureau and the demand for conference rooms in Ottawa made it difficult to secure appropriate quarters elsewhere. This will now be remedied by the existence in the new Bureau of an auditorium and conference room facilities.



DOMINION BUREAU OF STATISTICS
TUNNEY'S PASTURE
OTTAWA

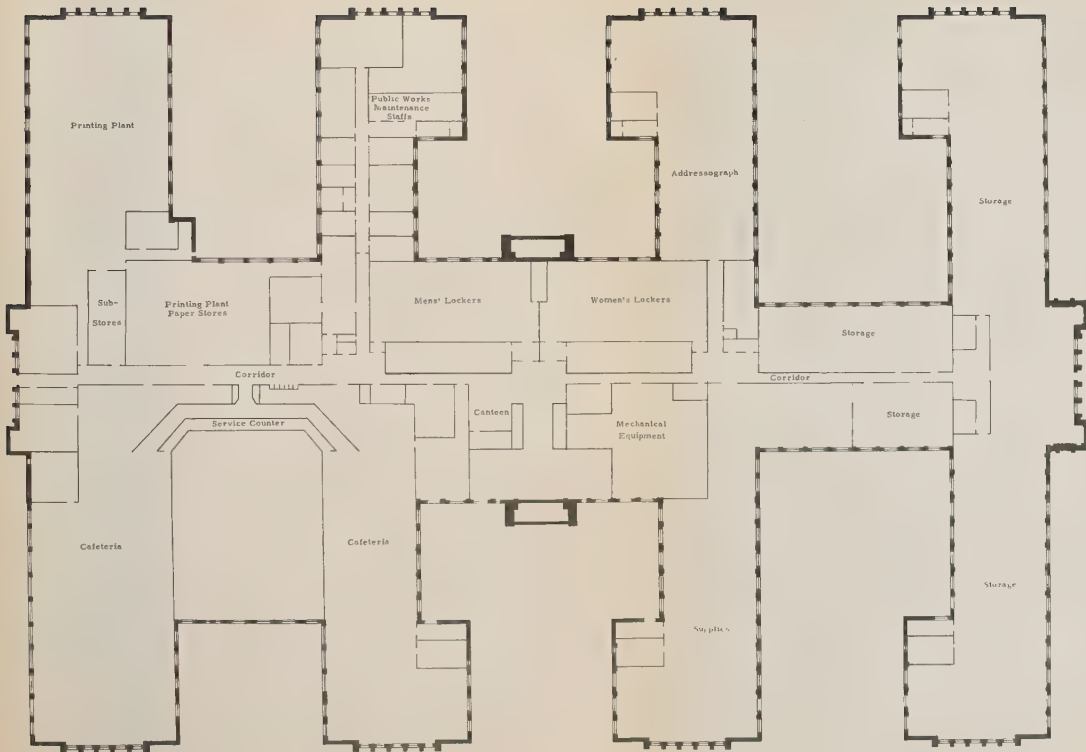
THE
NEW DBS
BUILDING



GROUND FLOOR
PLAN

THE
NEW D.B.S.
BUILDING

GROUND FLOOR
PLAN



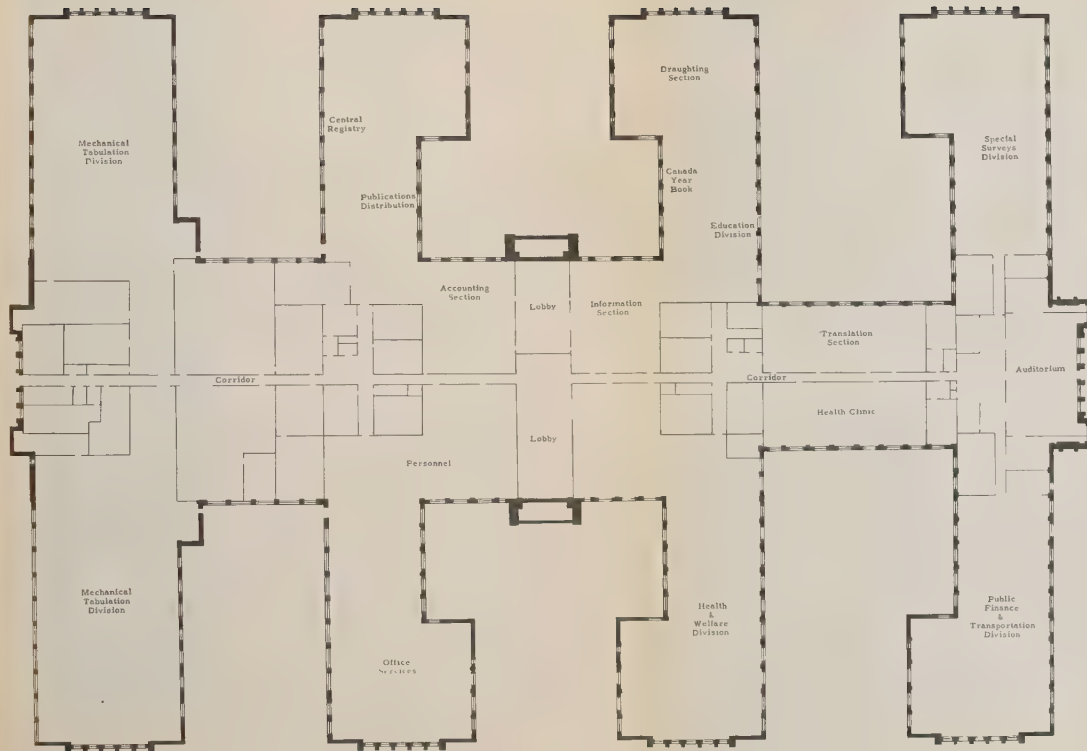
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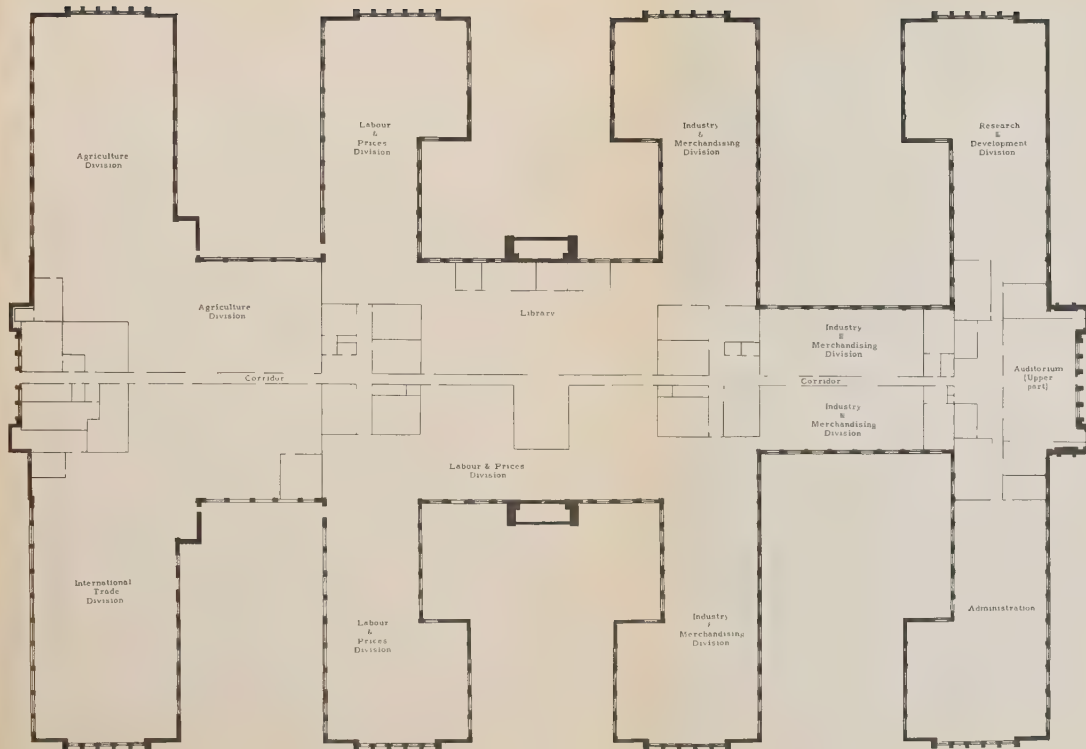
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